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THE

SEVEN BOOKS

OF

PAULUS ÆGINETA.

TRANSLATED FROM THE GREEK.

WITH

A COMMENTARY

EMBRACING A COMPLETE VIEW OF THE KNOWLEDGE

POSSESSED BY THE

GREEKS, ROMANS, AND ARABIANS

ON

ALL SUBJECTS CONNECTED WITH MEDICINE AND SURGERY.

BY FRANCIS ADAMS.

IN THREE VOLUMES.

VOL. I.

LONDON

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MDCCCXLIV.

"MULTUM EGERUNT QUI ANTE NOS FUERUNT, SED NON PEREGERUNT. SUSPICIENDI TAMEN SUNT, ET RITU DEORUM COLENDI." (SENECA, EPIST. LXIV.)

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ADVERTISEMENT.

Although in the Preface which immediately follows, and which is reprinted with slight alterations from the former edition, I have entered, at some length, upon the subject of the following translation, I felt it necessary, in the circumstances under which my work now appears, to premise a few additional remarks.

It is now many years since I undertook and completed a translation of the whole works of Paulus Ægineta. In the year 1834 I published the first three books, with a commentary, having for its object to embody the most important opinions of the Greek, Roman, and Arabian writers, on all subjects treated of by the original author. Notwithstanding the very favorable reception which that volume obtained from many of the most eminent members of the medical profession, as well as from scholars both at home and abroad, I was under the necessity—from circumstances which I need not here detail—of deviating from my original intention of completing the publication of the work in the same form and at my own risk. After an interval of ten years the proposition was made to me by the Council of the Sydenham Society to prepare a new edition of the volume already published, and to complete the remaining two on the same general plan. This proposition was too gratifying to my feelings not to be immediately assented to; and it is with unfeigned satisfaction that I have now the honour to submit the

first volume of the work to the members of so distinguished and important a Society.

In preparing this volume for the press, knowing that it will now be subjected to the criticisms of a very numerous and intelligent body of my professional brethren, I have been anxious to render it worthy of their approbation as far as lay in my power. At the request of the Council I have made considerable omissions in my commentary as formerly printed, more especially in regard to modern authorities; it being thought advisable not to bring the annotations further down than the period of the Arabian writers. I have also made not a few additions and alterations which I hope will be considered as improvements. In performing this part of my task I have greatly profited by the aid and valuable criticisms of two esteemed friends, Sir William Hamilton of Edinburgh, and Dr. Greenhill of Oxford.

I am sensible that it is to the growing conviction in the profession, of the value of the ancient authorities, that I owe the very flattering distinction which my work has now obtained; and I shall have great satisfaction in reverting to the labours of former years if they should now prove instrumental in increasing the desire of becoming acquainted with the views and practice of our forefathers. That the ancient literature of medicine has been too much neglected in this country is not disputed by any competent judge; and it would appear from the remarks of M. Hecker, in his address to the physicians of Germany, given in his admirable work on Epidemics,[1] that the profession on the Continent is not much in advance of us in this respect.

The time, however, it is to be hoped, is not far distant when the medical profession will everywhere be impressed with the importance of becoming properly acquainted with the views of the animal economy and of its derangements, entertained by three of

[1] Dr. Babington's Translation; Sydenham edition, p. xv.

the most intellectual nations of mankind; and when every newly-broached hypothesis will be tested by a comparison with doctrines of a similar nature advanced in former days, and every newly-proposed remedy will be subjected to a like ordeal. Surely every age ought to endeavour to benefit by the experiments, whether successful or otherwise, of all preceding ones; instead of every generation commencing a new series of trials, and wandering over the same ground in search of truths which had been long ago discovered; or in stumbling through the mazes of error without regarding the beacons set up by their forefathers to direct the footsteps of their descendants. If the wisdom of antiquity be entitled to high reverence in any case, it surely is so in medicine, founded as this art especially is on general observation and experience.

What renders ancient medical literature of the more importance at the present day, is the circumstance that it is almost our only source of information with regard to the diseases prevalent in several extensive countries bordering upon the Mediterranean Sea. It is well known that the inhabitants of Greece, of Asia Minor, and of the north coast of Africa have been long sunk into such a state of intellectual decrepitude as renders them incapable of making and recording original observation ; consequently, for information in regard to the phenomena of disease, as manifested in these regions, we are almost entirely thrown back upon the literature of their ancestors.

I take the present opportunity of adverting to one or two circumstances which I omitted to notice in my original preface.

An objection, I am well aware, will be made by some scholars to the manner in which I have executed one part of my task. It is this :—that the references to ancient authors are often so vague, as to make it a matter of considerable difficulty to find the passages in the originals. It must be

admitted that there are grounds for this objection; and if I had the work to do over again, I should most probably take pains to obviate it, in some degree, at least. But to remedy the omission, after the work was completed on its present plan, would have been a task of immense labour to me, without bringing a correspondent advantage to my readers. Moreover, I am convinced that, even as they stand, the references will, in general, be found sufficient to guide those who have an acquaintance with the originals to the places indicated; and to those who are unacquainted with them, this strict system of quotation would be of no use, further than to inspire them with a greater degree of confidence in the accuracy and pains-taking research of the Editor. It may be proper for me, then, to state that I have made it an invariable rule never to quote at second-hand, nor to make any reference to the opinions of an author whose works I have not myself carefully examined.

Many readers, I fear, will find considerable difficulty with the names of the Compound Medicines which occur throughout this volume; and may be disposed to think it was the duty of the Commentator to explain them as they occur. In answer to this objection, I beg to state, that these compositions will be fully described in the third and last volume, which treats of the Materia Medica and Pharmacy; and on this account I thought it unnecessary to notice them elsewhere. The General Index, which will be given at the end of the work, will also facilitate reference in such cases.

F. A.

Banchory, *August 17th*, 1844.

EDITOR'S PREFACE

TO THE FIRST EDITION OF VOL. I.

Notwithstanding the additions which have been made of late years to the history of medical literature, it must still be admitted that there is not, in the English language, any work which contains a full and accurate account of the theoretical and practical knowledge possessed by the Greeks, Romans, and Arabians, on matters connected with medicine and surgery. Nor, as far as I can learn, is the case very different with the continental languages. For, although the German and French have lately acquired several histories of medicine distinguished for their ability and research, the object of these works would appear to be confined to a general exposition of the leading discoveries and revolutions in doctrine which marked each particular age or epoch in the profession; and I will venture to affirm that no person will be able to acquire from a perusal of them anything like a competent acquaintance with the minute details of ancient practice. The design of the present publication is to supply the deficiency, now adverted to, by giving a complete Manual of the Surgery and Medicine of the Ancients, with a brief but comprehensive outline of the sciences intimately connected with them, especially Physiology, the Materia Medica, and Pharmacy. At first it was my intention to accomplish this purpose in the form of an original work, but, being perplexed what plan to choose in arranging the multifarious matters which I had to treat of, I at last resolved upon taking for my text-book the celebrated synopsis of Paulus Ægineta, whereby I was at once supplied with

a convenient arrangement of my subject, and at the same time, by giving a close translation of it into English, I saw that I would be enabled to enrich our medical literature with one of the most valuable relics of ancient science. By following this correct and faithful guide, by supplying his omissions and enlarging his plan, when necessary, from the more copious works of his predecessors, and by adding, in all cases, the improvements of subsequent ages, down to the latest date of ancient literature, I am in hopes that I have been able to present the reader with a work from which he may, at one view, become acquainted with the prevailing opinions upon all the most important matters connected with medical practice during a period of more than fifteen centuries. Impressed with a sense of the arduous nature of the task which I had undertaken, and sensible that its value consists entirely in its completeness on all points, I have endeavoured to discharge this duty faithfully and to the best of my ability. I trust then it will be found that not only have I overlooked no treatise connected with the medical art which has come down to us from antiquity, but that I have turned to good account my acquaintance with the learned labours of modern commentators, especially in the department of the Materia Medica, in order to adopt the nomenclature of the ancients on these subjects to the terminology of Botany, Chemistry, and Mineralogy, in the present time.

And here may I be permitted to express my conviction that it is not altogether the blindness of partiality contracted towards intellectual pursuits upon which my mind has been so long engaged, that leads me to think that the original authors from whose stores I have drawn so liberally, will yet be found and acknowledged to have been well entitled to the confidence and reputation which they once enjoyed, and to which it is my wish that the present publication should, in some degree, restore them? It appears to me that, at certain periods of ancient times, the standard of professional excellence was such as would not easily

be attained at the present day, with all our vaunted improvements in knowledge; and that many of those early masters of our art were distinguished for varied stores of erudition, an ardent love of truth, and an aptitude to detect the fallacies of error, such as few of us even now can lay claim to. The Father of Medicine held that, to become an eminent physician, it was necessary not only to be well acquainted with the structure of the human frame, but also to be skilled in logic, astronomy, and other sciences (De Aer. Aq., &c.); and of him it may be truly asserted, that he cultivated the art of medicine upon the strict principles of the inductive philosophy more than two thousand years before the world gave Lord Bacon the credit of introducing this method of philosophising. His devoted admirer and follower, Galen, was evidently the very *beau ideal* of an accomplished physician; skilled in all the sciences of the day, in logic, mathematics, rhetoric, and the first philosophy; to all these ornamental branches of knowledge he added a minute acquaintance with anatomy and physiology; a practical experience with the phenomena of diseases as diversified by climate, situation, and the varied modes of life; a singular perseverance in collecting facts; and an extraordinary ability for generalizing them. The contemporaries of Celsus regarded him not only as well acquainted with medical literature, but also as being minutely skilled in every elegant and useful science which was known and cultivated at that remarkable period. And Rhases, the Arabian, requires of him who aspires to eminence in the medical profession, that, instead of wasting his earlier years in frequenting musical and drinking parties, he should have spent them in conning over the valuable records of ancient wisdom. "But the Sciolist," says he, "who gives himself out for a proficient in the art, while he has scarcely even a smattering of learning, will never be deserving of much confidence, nor ever attain any great eminence in his profession. For it can never be that any individual, to whatever age he may reach, should

be able to comprehend in his mind a subject so vast and diffuse, except by treading upon the footsteps of the ancients; since the boundaries of the science far exceed the narrow limits of the life of man, as is the case with most of the liberal arts as well as with medicine. The number of authors is not small by whose labours the art has attained its present growth; and yet one may hope to master the monuments of their industry within the space of a few years. Let us suppose that, in the course of a thousand years, a thousand authors had made improvements in the profession; and then a person who has diligently studied their works may improve his mind as much in knowledge as if he had devoted a thousand years to the study of medicine. But, when an acquaintance with former authors is despised, what need be expected from the efforts of a single person? For, however much he may surpass others in abilities, how is it to be supposed that his private stock of knowledge should be at all worthy to compare with the accumulated treasures of antiquity? In a word, he who has never turned over the pages of the ancient physicians, nor has formed to his mind a distinct conception of the nature of diseases before he enters the chambers of the sick, will find that, from ignorance and misapprehension, he will confound one complaint with another, for this obvious reason, that he has come to his task unprepared and uninstructed."

And here I would beg to call the attention of my readers to the fact that there is no legitimate mode of cultivating medical knowledge which was not followed by some one or other of the three great sects into which the profession was divided in ancient times. The Empirics held that observation, experiment, and the application of known remedies in one case to others presumed to be of a similar nature, constitute the whole art of cultivating medicine. Though their views were narrow, and their information scanty, when compared with some of the chiefs of the other sects; and although they rejected, as useless and unattainable, all knowledge of the causes and recondite

nature of diseases, it is undeniable that, besides personal experience, they freely availed themselves of historical detail, and of a strict analogy founded upon observation and the resemblance of phenomena. To this class we may refer Scribonius Largus, Marcellus, Plinius Valerianus, and a few others, frequently quoted by us. The sect called the Rational, Logical, or Dogmatical, holding that there is a certain alliance and connexion among all the useful and ornamental arts, maintained that it is the duty of the physician not to neglect any collateral science or subject. They therefore inquired sedulously into the remote and proximate causes of diseases, and into the effects of airs, waters, places, pursuits, food, diet, and seasons, in altering the state of the human body, and in rendering it more or less susceptible of morbid changes. Looking upon general rules as not being of universal application, they held that the treatment ought to be modified according to the many incidental circumstances under which their patients might be placed. They freely and fully availed themselves of whatever aid they could derive from experience, analogy, and reasoning. Hippocrates, Galen, Aëtius, Oribasius, Paulus Ægineta, Actuarius, and all the Arabian authorities, may be looked upon as belonging to this sect. The Pneumatic sect, to which Aretæus probably belonged, was nearly allied to the Dogmatical. The sect of the Methodists, rejecting altogether the consideration of remote causes, which they held to be of no importance to the cure, and giving themselves up to too bold a classification of diseases, according to certain hypothetical states of the body in which they were supposed to originate, fettered themselves too much with a few general rules, which they held to be so universally applicable, that they would scarcely allow of their being modified by incidental circumstances in any possible contingency. Notwithstanding this defect, it is undeniable that their speculations as to the nature of diseases are generally very acute, and their modes of treatment frequently very rational. Upon the whole, the

general outline of their system would appear to have borne a striking resemblance to that of the sect which started up in Edinburgh towards the end of the last century, called the Brunonian, from the name of its ingenious but fanciful founder, Dr. Brown. The only perfect model of ancient Methodism that has come down to us is Cælius Aurelianus, an author so truly eminent that some of his admirers in modern times have not scrupled to maintain that his works are even better worth being attentively studied than those of Hippocrates and Galen. Moschion and Theodore Priscian (otherwise known by the name of Octavius Horatianus) belonged to this sect; Alexander of Tralles also had a considerable leaning to its principles; and some would even refer the illustrious Celsus to the same class, but probably without good reason, for he would rather seem to have imbibed the genuine spirit of Eclecticism, and like his distinguished correspondent Horace, to have been

"Nullius addictus jurare in verba magistri."

Before concluding these prefatory remarks, it will be naturally expected that I should say something of the author whose work I have bestowed so much pains in translating and commenting upon. Here, however, I must regret that the information which I have to supply is exceedingly scanty and unsatisfactory. So little is known of him that it is not even ascertained in what century he flourished. Vossius is wholly undecided; Moreau and Le Clerc place him in the fourth century; Vander Linden and Conringius, in the fifth; but Freind, Albertus Fabricius, Hutcheson, Sprengel, and most of the late writers of the Ancient History of Medicine, bring him down as low as the seventh century, upon the authority of Abulfaragius; but every person who is at all acquainted with his works will agree with me that any opinion of his on chronological matters is entitled to very little consideration indeed.

What confidence does a writer deserve who states, for example,

that Andromachus, the physician who added the flesh of vipers to the celebrated electuary of Mithridates, lived in the time of Alexander the Great!—that Dioscorides, of Ain Zarba, flourished in the reign of Ptolemy Physcon, namely, about one hundred and twenty years before Christ, whereas it can scarcely admit of a doubt that the celebrated author of the Greek Materia Medica did not live earlier than the end of the first century of the Christian era!—and that Ruffus was contemporary with Plato, when we have the authority of Suidas that he lived in the reign of Trajan! Dr. Milward, in his epistle to Sir Hans Sloane, endeavours to settle the age of our author from the following train of inferences: In the first place, then, since Paulus quotes Alexander Trallian and Alexander Aëtius, it is quite certain that our author was posterior to both these writers. Now the age of Aëtius may be made out from the following circumstances: Aëtius mentions St. Cyril, Archbishop of Alexandria, whose death is ascertained from ecclesiastical history to have happened as late as the middle of the fifth century. Nay, he also takes notice of a medicine much recommended by Petrus Archiater, chief physician to Theodoric, who was posterior to St. Cyril. We cannot possibly suppose it likely, then, that Aëtius flourished earlier than the end of the fifth century. But what brings him still further down, is the circumstance that his predecessor, Alexander, is mentioned by Agathias, the historian, about the middle of the sixth century. (Hist. v, 6.) It would seem almost certain, therefore, taking all these things into consideration, that our Author cannot have lived at an earlier period than in the end of the sixth or the beginning of the seventh century.

But, whatever may have been the period at which he lived, there can be no doubt that he attained great eminence in his profession, and continued to be looked up to as one of the highest authorities in Medicine and Surgery during a long succession of ages. His countryman Nonnus, although he does not mention him by name, gives a brief compendium of a considerable por-

tion of his work; and Psellus does the same in politic verses of some elegance. All the medical authors, in a word, of the distinguished Arabian period, quote his opinions in almost every page of their works, and never fail to recognize him as one of the most eminent of their Grecian masters. At the revival of literature in modern times, the Latin translations of the Arabians continued for a time to be the ordinary guides to practice; but when the superior merit of their Greek originals came to be properly appreciated, our Author rose again into high consideration. As a proof of this, I may mention that the surgery of Fabricius ab Aquapendente is made up almost entirely from his works. Portal, therefore, had no good occasion for representing him as "one of those unfortunate writers to whom posterity had not done justice." I admit, indeed, that for some time past, since professional research and the study of ancient models have been superseded by a restless desire of novelty in theory and in practice, he has not enjoyed that consideration to which he is justly entitled; but, in this respect, he has only shared the fate of other names, equally eminent for their contributions to medical science, who have now been suffered to fall into neglect.

Of the Latin translations, which are very numerous, the most celebrated is that of Cornarius, published by Henry Stephens in his 'Medicæ Artis Principes;' which, however, after a careful examination, I have not found to be so trustworthy as I expected to find it. There once existed an Arabic edition by Honain, or Joannitius, (see Choulant, Handb. der Bücherkunde für die Aeltere Medicin,) but of it I know nothing. The only part which has been translated into any modern language is the Sixth Book, a French translation of which was published at Lyons, A. D. 1539. Of the original there are two editions, namely, the Aldine of 1528 and the Basle of 1538, in neither of which is the text so accurate as could be wished.

F. A.

Banchory-Ternan; *Nov.* 12*th*, 1833.

THE AUTHOR'S PREFACE.

It is not because the more ancient writers had omitted anything relative to the Art that I have composed this work, but in order to give a compendious course of instruction; for, on the contrary, everything is handled by them properly, and without any omissions, whereas the moderns have not only in the first place neglected the study of them, but have also blamed them for prolixity. Wherefore, I have undertaken the following Treatise, which, it is like, will serve as a commentary to those who may choose to consult it, whilst it will prove an exercise to me. For it appears strange that lawyers should be possessed of compendious and, as they call them, popular legal synopses, in which are contained the heads of all the laws, to serve for immediate use, whilst we neglect these things, although they have it generally in their power to put off the investigation of any point not only for little but even for a considerable time, whereas we can seldom or very rarely do so; for, in many cases, necessity requires that we act promptly, and hence Hippocrates has properly said, "the season is brief." (Aph. 1, i.) For their business is generally conducted in the midst of cities, where

there is an abundant supply of books, whereas physicians have to act not only in cities, in the fields, and in desert places, but also at sea in ships, where such diseases sometimes suddenly break out as, in the event of procrastination, would occasion death, or at least incur the most imminent danger. But to remember all the rules of the healing art, and all the particular substances connected with it, is exceedingly difficult if not altogether impossible. On this account I have compiled this brief collection from the works of the ancients, and have set down little of my own, except a few things which I have seen and tried in the practice of the art. For being conversant with the most distinguished writers in the profession, and in particular with Oribasius, who, in one work, has given a select view of everything relating to health (he being posterior to Galen, and one of the still more recent authors), I have collected what was best in them, and have endeavoured, if possible, not to pass by any one distemper. For the work of Oribasius, comprehending seventy books, contains indeed an exposition of the whole art, but it is not easily to be procured by people at large on account of its bulk, whilst the epitome of it, inscribed to his son Eustathius, is deficient in some diseases altogether, and gives but an imperfect description of others, sometimes the causes and diagnosis being omitted, and sometimes the proper plan of treatment being forgotten, as well as other things which have occurred to my recollection. Wherefore the present work will contain the description, causes, and cure of all diseases, whether situated in parts of uniform texture, in particular organs, or consisting of solutions of continuity, and that not merely in a summary way, but at as great length as possible.

In the First Book, you will find everything that relates to Hygiene, and to the preservation from, and correction of, distempers peculiar to the various ages, seasons, temperaments, and so forth; also, the powers and uses of the different articles of food, as is set forth in the chapter of contents.

In the Second is explained the whole doctrine of Fevers, an account of certain matters relating to them being premised, such as excrementitious discharges, critical days, and other appearances, and concluding with certain symptoms which are the concomitants of fever.

The Third Book relates to Topical affections, beginning from the crown of the head and descending down to the nails of the feet.

The Fourth Book treats of those complaints which are external and exposed to view, and are not limited to one part of the body but affect various parts. Also, of Intestinal Worms and Dracunculi.

The Fifth treats of the Wounds and Bites of Venomous Animals; also of the distemper called Hydrophobia, and of persons bitten by dogs which are mad, and by those which are not mad; and also of persons bitten by men. Afterwards it treats of deleterious substances, and the preservatives from them.

In the Sixth Book is contained everything relating to Surgery, both what relates to the fleshy parts, such as the extraction of weapons; and to the bones, which comprehends Fractures and Dislocations.

In the Seventh is contained an account of the Properties of all Medicines, first of the Simple, then of the Compound; par-

ticularly of those which I had mentioned in the preceding Six Books, and more especially the greater and, as it were, celebrated preparations. For I did not think it proper to treat of all these articles promiscuously, lest it should occasion confusion, but so that any person looking for one or more of the distinguished preparations might easily find it. Towards the end are certain things connected with the Composition of Medicines, and of those articles which may be substituted for one another: the whole concluding with an account of Weights and Measures.

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PAULUS ÆGINETA.

BOOK FIRST.

SECT. I.—ON THE COMPLAINTS OF PREGNANT WOMEN, AND THEIR DIET.

Of the complaints which befal women in a pregnant state, the most troublesome are a redundance of crudities, continued vomiting, salivation, heartburn, and loathing of food; it will therefore be proper to give directions regarding them. The most suitable remedies are, exercise on foot, food not too sweet, wines which are yellow, fragrant, and about five years old, and moderate drink. All these things are proper for the cure of crudities and vomiting. For medicines, you may give the plant of knot-grass, boiled in water, for drink; and likewise dill, and the Pontic-root, called Rha, in the dialect of its native country. These things may be taken at a meal, or before it. Externally, the flowers of the wild vine, those of the wild or domestic pomegranate, the leaves of the alsanders (*smyrnium*), and the seed of the fennel, may be mixed together according to pleasure, along with dates and old wine, and applied to the præcordium in the form of a cataplasm. Heartburn may be alleviated by drinking warm water, by gentle exercise on foot, and by covering the hypochondrium with soft wool. In the case of those who have an aversion to food, whet their appetite with a variety of articles of a savory nature, and also give dry starch. This last is particularly serviceable to those who long to eat earth, as is the case in the complaint called Pica, which occurs

most frequently about the third month after conception; because the fœtus being then weak, cannot consume all the aliment which is brought to the uterus, and hence various superfluities are collected in the stomach; and therefore they have a desire for complicated and improper articles, such as extinguished coals, Cimolian earth, and many more such things. On that account, the affection has got its appellation, either from the variety of colours which the bird Pica possesses, or from its being subject to this complaint. Labour and long journeys will also contribute to restore a desire for wholesome food. But she who has accustomed herself to live in an indolent manner, will not be able, when she proves with child, to bear exercise all at once. To those who loathe food, it may be of service to take acrid substances, and particularly mustard. For swellings of the feet, it may be proper to bind over them the herb anthyllis, soaked in vinegar; or to lay the leaves of a cabbage over them, and to anoint them with Cimolian earth mixed with vinegar, or with alum and vinegar. It is likewise of use to sprinkle the feet with a decoction of the Median apples, called citrons.

COMM. COMMENTARY. We shall commence by giving a short account of ancient opinions on a curious subject not touched upon by our author,—we mean, on the influence of the imagination in pregnant women on the fœtus.

Hippocrates says, that when pregnant women long to eat coals and earth, the likeness of these things appears on the head of the child. (De Superfœt. c. 8.) Galen likewise believed in the influence of the imagination of pregnant women on the fœtus *in utero*. (Ad Pison.) Soranus also was a firm believer, and gives instances in women and in the inferior animals of the force of imagination at the time of impregnation. (lib. vii.) This belief was very ancient, for it appears to be countenanced by the Jewish historian. (See Genesis, xxx, 37-9.) Traces of this opinion may be found in Hesiod; and distinct allusion to it is made in the 'Cynegetics' of Oppian. (i, 327.) The story in the 'Æthiopics' of Heliodorus respecting Chariclea, the white daughter of the black king and queen of the Æthiopians, bespeaks the prevalence of the belief at the time when this celebrated romance was written. Andreas

Laurentius gives an interesting statement of ancient and modern opinions on this subject. (De Mirab. Strum. Sanit.) COMM.

The bird *pica* is mentioned by name (κίττα) in the 'Aves' of Aristophanes. (See also Schol. in Aristoph. in Pac. 496, and Vesp. 348; Aristotle, Hist. An. vii, 4; and Pliny, Hist. Nat. x, 41.) Harduin concludes, from Pliny's account of it, that it was the magpie. But we are rather inclined to follow Schneider in referring it to the jay, or *corvus glandarius*.

On the disease, see Galen (Hyg.; de Causis Sympt. i, 7); Aëtius (xvi, 10); Theophanes Nonnus (c. 213); Moschion (de Morb. Mulier. c.*27); Eros (apud Gynæcia), Alexander Aphrodisiensis (Problem. ii, 73); Pseudo-Dioscorides (Euporist. ii, 16); Soranus (viii); Leo (vi, 14); Rhases (Contin. xi); Avicenna (iii, 21, 2); Haly Abbas (Theor. vi, 17); Serapion (Tr. iii, 22); Alsaharavius (Pract. xxv, 2, 8.) It appears to be the malacia of Pliny (Hist. Nat. xxiii, 56, ed. Hard.)

Moschion defines the Pica to be an appetite for unusual food, which happens to pregnant women at some irregular period; being attended with a collection of depraved humours and nausea. It occurs, he says, most commonly in the second month, but sometimes earlier, and sometimes later. He recommends a restricted diet at first, then wine, dry astringent food, cataplasms of a repellent nature, and bodily motion.

Soranus treats of Pica in very similar terms to those of Moschion.

But the account of the disease given by Galen and Aëtius is the fullest. They derive the name either from the bird, as mentioned above, or from ivy (κίττος), because, as ivy entwines itself about various plants, so does this appetite in pregnant women fasten upon a variety of improper articles of food. It is attended with languor of the stomach, nausea, and loathing of food, bringing on vomiting of bile or phlegm, anxiety, and pains in the stomach. All these symptoms arise, they say, from a sanguineous plethora, brought on by a suppression of the menstrual discharge. They, therefore, recommend a restricted diet, and moderate exercise when the woman was accustomed to it. When the humour which infests the stomach is of an acid, acrid, or saltish nature, they direct draughts of tepid water, to encourage vomiting; they forbid all sweet things; and recommend an old sub-astringent wine. When there is a loathing

COMM. of food, they advise us to tempt the appetite with a variety of savory things. To those who have a desire for eating earth, they particularly recommend starch. When the fluid which is vomited is of a thick and viscid nature, they recommend pickles, radishes, and oxymel, for an emetic. They also particularly direct astringent cataplasms and plasters to be applied to the præcordia.

As the practice of the other authorities is conducted upon similar principles, we shall mention them very succinctly. For the depraved appetite which longs for earth, Serapion recommends aromatic spices, such as cardamon, cubebs, and the like. For the continued vomiting, Alsaharavius directs plasters, containing the oil of spikenard, mastich, quinces, wormwood, and the like, or a vessel filled with hot water, to be applied over the stomach, pomegranate seeds to be held in the mouth; and that the patient should take gentle exercise, and abstain from all sweet things.

Alexander Aphrodisiensis accounts for the disease in much the same way as Galen and Aëtius. He says that, when the menstrual fluid is suppressed, a determination of it takes place to the stomach, until the fœtus becomes as large as to consume it.

Pliny strongly commends citrons for the cure of the disease.

For the œdematous swellings of the feet and legs, most of the other authorities concur with our author in recommending astringent applications. The anthyllis, mentioned by him, is supposed by Sprengel to have been the *cressa cretica*. (R. H. Hist. p. 164.)

We shall conclude our commentary on this Section with an outline of the directions given by Aspasia for the management of pregnant women. Women who have conceived are to be guarded from frights, sorrow, and all violent mental perturbation. They are to avoid gestation in carriages, severe exercise, inordinate breathing and blows about the loins; also the lifting of heavy loads, dancing, and sitting on hard seats. Likewise all acrid and flatulent food, strong clysters, and too much or too little food and drink are to be avoided. All discharges of blood, whether from the nose or hemorrhoids, are dangerous in the pregnant state. Moderate and wholesome food, gestation in a sedan, gentle walking, soft friction, and the exercise

of spinning are proper. About the eighth month, which is the most critical period of pregnancy, the diet is to be more contracted, and the exercise increased. If the bowels are constipated owing to compression of the rectum, by the enlarged uterus, laxative food is to be given, such as ptisan and mallows. In the ninth month the regimen is to be of a relaxing nature, and for this purpose the tepid bath is to be frequently taken, for it has a great effect in rendering parturition easy. (Apud Aëtium, xvi, 12.) COMM.

Our author borrows part of this chapter from Oribasius, and abridges the rest from Galen and Aëtius.

SECT. II.—ON THE NURSE.

A nurse is to be chosen who is free from every complaint, and is neither very old nor very young. She ought not to be less than twenty-five nor more than thirty-five. Her chest should be large, as also her breasts, and her nipples neither contracted nor turned aside. The rest of her body should be neither very fat nor very spare. It is of great consequence to the child that his nurse should have brought forth but a short time before, and that her child had been a male rather than otherwise. She ought to avoid everything of a very desiccative nature, and likewise such as are saltish, acrid, sour, acid, bitter, very heating, or of an offensive smell: also, such as are strongly fragrant, condiments, and such like acrid substances. Let the nurse also abstain from venery. Let her work with her hands and shoulders, let her labour at the mill and the loom, and carry about the child in her arms. This may be done for three or four months.

COMMENTARY. This Section is taken from Oribasius. (Synops. v, 2.) COMM.

Aëtius gives somewhat fuller directions. He says, the nurse ought not to be younger than twenty, nor older than forty; should be free from disease, and have breasts neither too small nor too large; for when the breasts are too large, they contain more milk than the child can manage: and part being retained spoils, and proves injurious to the child, and even affects the

Comm. health of the nurse; when too small, on the other hand, they do not contain a sufficient supply of milk. Large nipples, he remarks, hurt the gums, and impede deglutition; whereas, when too small, they cannot be got hold of. The nurse, he says, should be chaste, sober, cleanly, and cheerful. (iv, 4.)

The directions given by the other authorities, are very similar to our author's. See, in particular, Rhases (ad Mansor. iv, 30); Avicenna (Cantic.); Averrhoes (in Cant. p. ii, tr. 1.) Avicenna says, the nurse ought to be from twenty-five to thirty-five years old. Averrhoes says, from twenty to thirty.

It appears to have been a general practice among the Romans, after they became luxurious and effeminate, for the ladies of noblemen to consign the care of their infants to wet nurses. Tacitus, in his elegant dialogue 'de Oratoribus,' inveighs against this practice. See also a spirited declamation on this subject, by the philosopher, Phavorinus, in the 'Noctes Atticæ' of Aulus Gellius. (xii, 1.)

SECT. III.—ON THE MILK OF THE NURSE.

The best milk is that which is moderate in thickness, quantity, colour, smell, and taste. It is a proper way to try the quality of the milk, by pouring a little of it upon the nail of the thumb and observing it in the sun; for, when upon turning the nail, it neither runs off too slowly nor too quickly, it is good milk. You may also try it thus: by pouring some milk into a glass vessel, and putting some runnet into it, then squeezing them together with your fingers, allow it to coagulate, and observe whether the cheesy part be less than the serous; for such milk is unsuitable, and also the opposite kind is of difficult digestion. The best kind is that which has a moderate proportion of each.

Comm. COMMENTARY. This Section is taken from Oribasius (Synops. v, 3), and Aëtius (iv, 3.)

The method of trying the quality of the milk here recommended is mentioned by Aëtius, Barytus (ap. Geopon. xviii, 20), Dioscorides, Avicenna, Haly Abbas, and Alsaharavius. According to Avicenna, a child ought not to be allowed to take suck oftener than twice or thrice in the day. See, in particular, Haly Abbas (Pract. i, 21), and Alsaharavius (Pract. xxx, 3.)

SECT. IV.—HOW TO CORRECT THE BAD QUALITIES OF MILK.

The bad qualities of milk may be thus corrected. If it be too thick, the phlegm ought to be evacuated by vomits, the most proper of which are those of vinegar and honey. It is also proper to extenuate by labour before meals. Also the following substances are proper, namely: wild marjoram, hyssop, savoury, shepherd's needle, thyme, the small radish, and old pickle with vinegar and honey. But if it be more acrid and thinner than natural, the nurse ought to be relieved from much labour, to be fed upon strong soups, and the flesh of swine, and to be allowed sodden must and sweet wine. If it be in too small quantity, she ought to get soups and a generous diet, with sweet wine for drink; and her breast and nipples should be rubbed. The cupping instrument, if applied, will also be of service. That medicines for the formation of milk, are possessed of some efficacy, I am well aware, and yet I do not recommend them in all cases, for they greatly waste the body. They are, the root and fruit of the fennel boiled in ptisan, the leaves of the cytisus in dark-coloured wine or ptisan, the sweet gith (*melanthium*), dill, the root and fruit of the carrot. They are to be first soaked with warm water, and then given. But when the milk is bad, whether it be thick, acrid, or of a strong smell, it is first to be sucked out and then the child is to be applied. For that which is acrid ought, on no account, to be given to the infant when hungry; but that which has an offensive smell may be corrected by fragrant wine and sweet food. Of coagulated milk in the breasts, we will treat in the Third Book.

COMMENTARY. Aristotle forbids wet nurses to drink wine. COMM. It is the same thing, he adds, whether the nurse or the child drink it. (De Somno.)

Oribasius, Aëtius, and Avicenna give similar directions to our author's. They all permit nurses to take a moderate allowance of animal food and wine. When the nurse has too little milk, Aëtius recommends her to drink ale (Zythus.) He also approves of sweet wine, gruels prepared with fennel, or green dill boiled with ptisan. When the milk is thin, he directs her to abstain

COMM. from baths, and to take food of a nutritive quality, such as fine bread, the legs of swine, tender birds, the flesh of kids, and sweet wine. When the milk is thick, he recommends frequent baths, and an attenuant diet. When it is excessive, he directs her to diminish the quantity of the food, and to take what is less nutritive, and to make discutient applications to the breasts, such as a linen cloth dipped in vinegar, and to wash them frequently with warm salt water, or the decoction of myrtle.

Hippocrates forbids the nurse to take things of an acrid, saltish, acid, or crude nature. He recommends fennel, cytisus, parsley, and the hot bath as a general regimen to nurses. (De Mulieb.)

Haly Abbas gives similar directions. He properly recommends the nurse to abstain from taking things of a pungent, sour, and bitter nature. When the nurse's milk is deficient, he recommends that she should get the milk of cows and goats, fennel, lettuce, parsley, and the like. (Pract. i, 21.)

SECT. V.—ON THE MANAGEMENT OF THE INFANT.

The first food given to a new-born child should be honey, and afterwards milk, twice, or at most three times a day. When it appears disposed for it, and seems able to digest it, it may get some food, care being taken not to stuff it. If this should happen to be the case, it will become more sleepy and inactive, there will be swelling of the belly and flatulence, and its urine will be more watery than natural. When this is observed, it ought to get no more food until what it has got be consumed. The child may be brought up upon milk until it be two years old, after which, its diet may be changed to food from grain.

COMM. COMMENTARY. This Section is taken from Oribasius. (Synops. v, 5.)

Galen, in like manner, approves of the honey. He directs the body of a new-born child to be sprinkled with salt; and afterwards rubbed every day with oil. After the milk-diet is given up, the first food to be administered, he says, should be bread, and afterwards pulse and flesh. He forbids the use of wine, because the temperament of a child is hot and humid. He approves of the hot bath, but condemns the use of the cold for young children. (Hyg. pluries.)

Aëtius recommends the child to be brought up upon milk for twenty months. Moschion says, from eighteen months to two years will be sufficient. Avicenna, like our author, mentions two years. It is stated by Selden, that the Hebrew women gave suck to their children for two years. This practice is enjoined in the Koran. Aëtius is not so strict in regard to regimen as Galen; he allows us to vary the milk-diet, by giving occasionally soft eggs, mead, or sweet wine diluted with water. (iv, 28.) COMM.

Moschion, Averrhoes, and Avicenna approve of exercising the child in a cradle, and of lulling him with music. When the cord falls off, Avicenna advises that the part should be sprinkled with the powder of burnt lead.

Averrhoes disapproves of sprinkling the child's body with salt, as recommended by Galen. (Collig. ii, 6.) He agrees with Galen, however, in condemning the use of wine. He directs exercise for the child every day; after exercise, friction, and after friction, the bath. He forbids the use of the cold bath, however, because it retards the growth. When the child does not sleep, Avicenna and Averrhoes recommend poppy in his food. (Cant. ii, 1.)

Haly Abbas directs us, when there is any malformation of the head, to reduce it to its proper shape, and bind it firm. Like Galen, he recommends that the body of a new-born child should be sprinkled with salt and powdered roses, to harden the skin. He directs us to give the child, for the first two days, sugar, triturated with the oil of sesame. He recommends the frequent use of the tepid bath. He properly directs the nurse not to expose the child's eyes to the strong light of day, nor to allow him to sleep in a strong sun, for fear of injuring his eyes. When a child cries, it is the duty of the nurse, he says, to find out the cause, as a child never cries except when something hurts it. The most common causes, he adds, are, heat or cold, fleas or gnats, hunger or thirst, retention of urine or of the fæces. For retention of the urine, he recommends melon-seed with julep both to the child and the nurse; and when the child's bowels are constipated, he directs the nurse to take laxative herbs, oil of olives, prunes, and so forth. It is clear, therefore, that he was aware that a child may be operated upon by medicines given to the nurse. (Pract. i, 20.)

The directions given by Alsaharavius are very similar. He

COMM. remarks that violent crying may occasion a descent of the bowels.

Syrasis, one of the commentators on Avicenna, recommends the tepid bath for young children, and food after it. He directs the nurse to exercise the child before putting him into the bath.

From what we have stated, it will be seen that the ancient physicians did not approve of the cold regimen, absurdly proposed by certain modern philosophers as the most proper for infants.

According to Athenæus, the sons of Roman freemen were prohibited from drinking wine until they were thirty years old. (Deipnos, x, 23.) Plato enjoins complete abstinence from wine until the age of eighteen, and great moderation until thirty. (Leg. ii.)

SECT. VI.—ON THE ERUPTIONS WHICH HAPPEN TO CHILDREN.

Whatever eruptions appear upon the skin of a child, are to be encouraged, in the first place; but when the eruption is properly come out, it may be cured by putting the child into baths of myrtle, or lentisk, or roses, and then anointing with the oil of roses or lentisk, or with a cerate containing ceruse. And its body may be gently rubbed with nitre; but it will not bear hard friction. But a very good plan is for the nurse to be fed upon sweetish things. And the child's diet ought to be attended to, so that it be neither too full nor too spare. If the child's belly be constipated, a little honey may be put into its food; and if even then it do not obey, turpentine, to the size of a chick-pea, may be added. When the bowels are loose, millet, in particular, ought to be administered.

COMM. COMMENTARY. This Section is taken from Oribasius (Synops. v, 6.) See also Aëtius (iv, 21.) The Exanthemata here referred to would appear, properly speaking, to be the *strophuli* of Dr. Willan, but the ancients used the term rather vaguely for several eruptive diseases. (See Book Fourth.) The Exanthemata are the "pustulæ parvæ" of Eros (apud Gynæcia, p. 59.) For the Arabians, see in particular Haly Abbas (Pract. i, 20); Avicenna (i, 3, 1); Alsaharavius (Tr. xxvi, 7 and 8.) Alsaharavius describes two cutaneous complaints of infancy by the names of *Alseafa* and *Alkaba*. The former he describes as

consisting of pustules, which affect the heads of infants, and sometimes the face. They are attended, he says, with a constant itching, and occasion erosion. His treatment is to shave the head, and to apply to it first a leaf of blite (*bletæ* vel *betæ?*) and afterwards an ointment composed of spuma argenti, ceruse, and lye, with rose-oil and wax. The *Alkaba* is said to be of the same nature, only that the fluid which runs from the pustules resembles honey. This, therefore, must be the *porrigo favosa*. His remedies are, to wash the head frequently with a lotion made from marjoram, mint, or centaury; and then to apply an ointment composed of spuma argenti, ceruse, Armenian bole, sulphur, almonds, and quicksilver; and also liniments of rose-oil and vinegar, with the free use of the bath. As Dr. Willan remarks, he has described the *strophuli* by the name of pustulæ, (*bothor.*) (Tr. xxvi, 25.) He says of them: "Aliæ sunt albæ, aliæ rubeæ, aliæ nigræ, aliæ magnæ, aliæ parvæ et multæ et paucæ, aliæ fortis et acuti doloris, et mortiferæ," &c. It appears, therefore, that he applies the term in a very lax signification. COMM.

Rhases describes the Exanthemata by the name of *vesicæ*. He prescribes, at the commencement, medicines for expelling the morbific superfluity from the inner parts, such as the decoction of dates or figs, with fennel water. When the eruption is fairly come out, he recommends baths medicated with roses, myrtles, and the like; after which, the child is to be rubbed with the oil of roses or of violets. (De Morbis Infant. c. 19.) We may mention that Lanfrancus, and the other medical authorities of that age, describe them by the name of *saphati*.

SECT. VII.—ON THE COUGH AND DEFLUXION OF INFANTS.

When the child is seized with cough or defluxion, recourse is to be had to a linctus of honey. It is first to be bathed copiously with warm water, even to its head, and plenty of honey given: then press its tongue gently with your finger, and it will vomit up much phlegm.

COMMENTARY. See Oribasius (Synops. v, 7), and Aëtius (iv, 18.) Aëtius recommends various lohochs or linctus. One of them consists of pine-nuts, almonds, linseed, liquorice-juice, and honey. COMM.

COMM. Emetics and demulcents, such as gum arabic and liquorice, are the remedies recommended by Avicenna. (i, 3, 1.)

Haly Abbas approves of lohochs, containing almonds, honey, &c. (Pract. i, 20.) Alsaharavius recommends various demulcents, and an electuary containing poppy-seed, tragacanth, and the seeds of citrons, to be taken in a decoction of Sebesten plums. He also directs us to produce vomiting, by making the patient swallow copious draughts of honied water. (Tr. xxvi, 24.)

Rhases recommends nearly the same remedies. (De Morbis Infant. c. 18.)

This would appear to be the most proper place for giving from Aëtius some account of two affections of infancy, which our author has omitted to describe. He says, when children have been fed on improper food, or when, from any other cause, their stomachs become loaded with phlegm, they are troubled with snorting; and in that case he recommends a linctus of linseed, honey, &c.; or if the affection be obstinate, to make them vomit by pressing down the tongue with a finger smeared with oil. (iv, 7.)

When an infant has lost its voice, which, he says, arises commonly from constipation, he recommends the juice of cabbage, either by the mouth or in a *lavement;* or a suppository into the anus. (iv, 8.)

SECT. VIII.—ON PRURITUS.

If the child be troubled with pruritus, use fomentations, and anoint with plenty of refined oil, in which a little wax has been melted.

COMM. COMMENTARY. See Galen (Hyg. v); Oribasius (Synops. v, 8); Avicenna (i, 3, 1); Haly Abbas (Pract. i, 20); Rhases (de Morb. Infant. c. 19); Alsaharavius (Pract. xxvi, 25.)

The account given by Oribasius is similar to our author's. (Synops. v, 8.)

Alsaharavius properly recommends attention to correct the acrimony of the nurse's milk; to wash the child with decoctions of roses, myrtle leaves, and the like; if the pustules are of a dry nature, to rub them with oil of sesame or of violets; and, if humid, with an ointment made of wax, litharge, and rose-oil.

Rhases directs the nurse to abstain from sweet and salt things, as they inflame the blood; and to put the child into a bath medicated with mallows, pearl-barley, fenugreek, gourds, &c. COMM.

Avicenna and Haly Abbas treat the complaint upon similar principles.

SECT. IX.—ON DENTITION.

Dentition commences about the seventh month. At that time inflammations of the gums, cheeks, and tendons are apt to occur; and sometimes convulsions. The child must then get nothing which requires mastication; and his gums should be rubbed frequently when in the bath with the finger, or soothed with the fat of fowls or the brain of a hare. When the teeth are just coming through, the neck, jaws, and head should be wrapped in soft wool, or they may be anointed with warm sweet oil, some of which ought to be poured into the pores of the ears. The child ought then to have a more generous quality of food, and be bathed in warm water. If he have diarrhœa, it is proper to bind his belly by epithemes, namely, such as are of an astringent nature, as cumin, dill, or parsley, sprinkled upon wool. It is proper to mix the seeds of roses, and, in short, to use hot desiccants. If the bowels are constipated, they may be gently roused to action by means of a suppository of honey, or the belly may be anointed with mint pounded in honey. But the best remedy for the convulsions of children, apparently, is to bathe them in water wherein turnsol (*heliotropium*) has been boiled. It will be of consequence also to use the oil of privet, of the iris, and the Sicyonian oil; and, in short, everything which is of a calefacient nature. But when the teeth have come through so as to bite the fingers, it may be proper that he keep in his mouth the root of the iris, shaven down and not quite dried. This also is of use to ulcers. Butter likewise rubbed in with honey will be of service. The flesh of an old pickle relieves pruritus of the gums.

COMMENTARY. See, in particular, Oribasius (Synops. v, 9), and Aëtius (iv, 9.) Hippocrates and Aëtius recommend a jasper amulet. Hippocrates remarks that fevers, pruritus, looseness of the bowels, and convulsions are apt to come on at the time of COMM.

Comm. dentition, if the child be plethoric, and his bowels constipated. (Aphoris, cum Comment. Galeni.) Aretæus makes the same statement. (Morb. acut. i, 6.)

Moschion directs the gums of the child to be rubbed, after the fifth month, with sweet oil, the fresh grease of a hen, the brain of a hare, and lastly with boiled honey. When inflammation supervenes afterwards, he recommends fumigations and cataplasms, and directs the food and drink of the nurse to be restricted. (c. 119.)

The directions given by Avicenna are similar to those of Moschion. (i, 3, 1.) Alsaharavius properly states that the best way to avoid difficult dentition is to guard against corruption of the food and drink, and to abstain from emetics, acids, figs, &c. To remove the painful symptoms attendant on dentition, he directs us to rub the gums with olive oil, honey in which aloes and gum arabic have been boiled, and the like; to wrap the head in soft wool, and to pour tepid water upon it. (Pract. xxxvi, 19.)

The treatment recommended by the other authorities is very similar. See, in particular, Rhases (Ad Mans. iii, 13.)

The only ancient authors who make mention of scarification of the gums as a remedy for painful dentition are, Marcellus Sideta (Medicina, ex Piscibus,) and Pliny (Hist. Nat. xxxii, 26.) Both direct it to be done with the sting of the *Pastinaca Marina*.

SECT. X.—ON APHTHÆ.

Infants are liable to an ulcer of the mouth called aphtha. It is either whitish, reddish, or black, like an eschar. That which is black is of the worst kind and most fatal. The iris mixed with honey is of use, or you may blow in the dry powder if you please; also, the pounded leaves of roses, or the flowers of roses, and crocus—a small quantity of myrrh, galls, frankincense, or the bark of the frankincense tree: all these together, or separately, may be mixed with honey; and, in addition to these, may be joined honied water and the juice of the sweet pomegranate.

Comm. Commentary. Hippocrates mentions aphthæ among the diseases of dentition. (De Dent.) Theophilus, the commentator

on Hippocrates, says, that aphthæ are occasioned by the tenderness of the parts, which cannot bear the bad qualities of the milk. According to Aretæus, the land of Egypt is particularly prolific of these ulcers, which are engendered by the impurities of the water and the quality of the vegetables that grow there. (Morb. Acut. i, 9.) The aphthæ appear to be the *oscedo* of Isidorus. (Orig. iv, 8.) COMM.

Our author copies from Oribasius. (Synops. v, 10.) See also Aëtius, (viii, 39.) Aëtius borrows his account from Galen, who is very full upon the treatment of aphthæ. He remarks that recent superficial ulcers are easily cured, but that such as spread and are of a gangrenous nature are very dangerous. He gives, at great length, directions for the composition of applications, suited to every modification of the complaint. When the pustules are red, he prescribes washes of a moderately astringent and cooling nature; if yellowish, the same, but somewhat more refrigerant; if whitish and pituitous, detergents are to be used; and, if black, the most powerful discutients. For simple cases of the aphthæ infantium, he merely recommends the flowers of roses with honied water. Most of his remedies are astringents. (De Med. sec. Loc. lib. vi.) In another work, he says that aphthæ are occasioned by the acrimony of the milk, and are to be cured by astringents. (Comment. in III Epidem.)

Pliny mentions that the *lapis melititis* was used as an application in cases of ulceration of the fauces. (Hist. Nat., xxxvi.) There is reason to believe that it was Borax, or borate of soda.

Avicenna recommends at first washes prepared from the vegetable acids, and afterwards astringents, such as galls, sumach, balaustine, &c. (i, 3, 1.) See also Haly Abbas (Pract. i, 20.)

Alsaharavius states that aphthæ commonly arise from the sharpness of the milk. His general treatment consists in regulating the diet of the nurse, and using washes principally of an astringent nature for the child's mouth. When they are very painful, he adds to the washes the juice of lettuce, endive, and the like. When they are whitish, he recommends a powder consisting of myrtle, saffron, and sugar. (Tr. xxvi, 20.) Rhases' treatment is quite similar. (De Morbis Infantium, c. 14.)

The author of the following work, which has been falsely ascribed to Dioscorides, recommends certain applications of a

COMM. strongly escharotic nature, such as this: Of arsenic, p. i; of burnt paper, p. iii; or this, of sandarach and rose-oil equal parts. (Euporist. i, 82.)

Psellus enumerates two kinds of aphthæ, namely, the white and the red; the former, he says, is mild, the latter very dangerous. (Poëma Medicum.)

SECT. XI.—ON EXCORIATIONS OF THE THIGHS.

Excoriations of the thighs may be sprinkled with dried myrtle, cyperus, and roses.

COMM. COMMENTARY. See, in particular, Oribasius (Synops. v, 11); Aëtius (iv, 24); and Avicenna (i, 3, 1.) All recommend nearly the same astringent applications for the intertrigo of infants.

SECT. XII.—ON WATERY DISCHARGES FROM THE EARS.

Watery discharges from the ears may be dried up by applying to them wool with alum, or with wine and honey, or by an injection of old wine either alone or mixed with saffron.

COMM. COMMENTARY. Oribasius, Aëtius, Avicenna, and Haly Abbas recommend the same treatment, which would seem to be very proper. Alsaharavius recommends wool soaked in a solution of alum, and injections, consisting of solutions of nitre (soda) in vinegar. Rhases makes mention of nearly the same applications. (De Morb. Infant. c. 9.)

SECT. XIII.—ON SIRIASIS.

Siriasis is an inflammation of the parts about the brain and its membranes. A hollowness of the open of the head and eyes attend it, with paleness and dryness of the body. It is relieved by an application of the red of an egg with oil of roses to the open of the head, in the form of a compress, and frequently changed.

Another application for Siriasis. Place upon the open of the head, the leaves of that species of heliotropium called scorpiurus, the parings of a gourd, the membrane which envelopes the fleshy part of a ripe cucumber, the juice of the garden night-shade, with oil of roses.

COMMENTARY. See Oribasius (Synops. v, 13); Aëtius (iv, 13); Avicenna (i, 3, 1); Haly Abbas (Pract. i, 20); Alsaharavius (Pract. xxvi, 9); Rhases (de Morb. Infant. c. 5); Pseudo-Dioscorides (Euporist. i, 9); Alexander Aphrodisiensis (Problem i, 98); Pliny (Hist. Nat. xxxii, 48.) COMM.

Aëtius and Avicenna agree in describing it as an inflammation and swelling of the brain and its membranes, so as to occasion a hollow at the bregma, and as being attended with ardent fever. The account given by the others is very similar. All recommend cooling and astringent applications to the part. According to Alexander Aphrodisiensis, children are most subject to this affection, especially in the summer season; for which he attempts to assign the reason. He describes it as an inflammation of the membranes of the brain. The author of the 'Euporista' recommends the juices of various cooling herbs, as local applications. Pliny represents the heat of it as excessive. He says, "Siriasesque infantium spongia frigida crebro humefectata, rana inversa adalligata efficacissime sanet, quam aridam inveniri affirmant." (l. c.)

Although somewhat out of place, we shall venture to introduce here some account of two diseases of infancy which are omitted by our author, but are briefly described by Aëtius and Rhases.

For prolapsus ani, Aëtius recommends various applications in the form of powder and fomentation; but states, that what he himself constantly made use of was tepid brine or salt water. (iv, 19.) See Rhases (de Morb. Inf. c. 21.)

Umbilical hernia, he says, may be occasioned by crying, a blow, or a fall. For this he recommends various astringent preparations from alum, galls, &c., applied on a linen compress to the navel. (iv, 20.) Rhases recommends similar applications, and also a compress with the gluten of hides to be bound over the navel. (De Morb. Infant. c. 22.) As far as we can recollect, Hippocrates and his commentators are the only ancient authorities that make mention of inflammation of the navel after the cord has dropped off. (Aphor. c. Comment. ed. Dietz, p. 374.)

SECT. XIV.—THE REGIMEN OF INFANCY, AND OF THE SUCCEEDING AGES UNTIL MANHOOD.

Infants and children when weaned from milk, are to be allowed to live merrily and without restraint; their food ought to be light, and their exercise gentle. After six or seven years of age, both boys and girls are to be consigned over to schoolmasters of a mild and benevolent disposition; as such persons will impart instruction to them in a cheerful manner, and without constraint; for relaxation of the mind contributes much to the growth of the body. Boys twelve years of age should go to teachers of grammar and geometry, and get their bodies hardened by gymnastic exercises. From fourteen to twenty-one, their proper employment will be the study of mathematics and initiation in philosophy. At the same time, however, it will be proper to use more exercise for strengthening the body, so that, exercising both mind and body, they may be prevented from indulging their carnal desires. They ought likewise to be restricted as to wine. To adults the fullest supply of nourishment, both as to body and mind, ought to be allowed; wherefore, they should use all kinds of gymnastic exercises, particularly such as each has been accustomed to, and food which is sufficient and nutritious. In the decline of life, both the bodily and mental supply ought to be abridged; and the gymnastic exercises diminished in proportion. The food also is to be gradually lessened as the habit begins to contract the frigidity of age.

COMM. COMMENTARY. These simple but judicious directions respecting the regimen of the different periods of life are taken from Oribasius (Synops. v, 14); or from Aëtius (iv, 29.) Many of them are borrowed originally from Galen. (Hyg. i.)

Similar directions are given at great length by Haly Abbas. He positively prohibits children from taking wine. He insists that wine not only proves prejudicial to health, but also deteriorates the morals. (Pract. i, 22.) Alsaharavius agrees with him in proscribing wine to children. (Theor. xiii, 2.)

Avicenna makes very judicious observations on this subject, but the greater part of them are taken from Galen. He insists,

with becoming earnestness, on the propriety of attending to the regulation of the passions of the child, as being conducive to his health as well as to his morals. As soon as the boy is roused from sleep he is to be bathed; then he is to be allowed to play for an hour; afterwards, he is to have something to eat, and then is to be allowed more play. Afterwards he is to be bathed; then he is to take food; and, if possible, he is to be prevented from drinking water immediately after a meal, as it has a tendency to make unconcocted chyle be distributed over the body. When six years old, he is to be consigned to the care of a teacher, but he is not to be compelled to remain constantly in school. Avicenna goes on to state that, at the age he has then reached, he is to be more sparingly bathed, and that his exercise is to be multiplied before eating. Like most of the ancient authorities, he forbids wine to a child. Thus, he adds, is the regimen of the child to be regulated until he reach the age of fourteen. (I, i, 4.) COMM.

Averrhoes gives very sensible directions on this subject. He forbids the use of wine and ales until manhood. (Collig. vi, 6.)

SECT. XV.—ON THE PREPARATORY FRICTION.

Before gymnastic exercises, the body ought to be rubbed moderately first with towels, and then with oil in the hollows of the naked hands, until it be properly warmed and softened, and its surface have contracted a florid blush, and become distended.

COMMENTARY. A more circumstantial account of the mode of preparing the body for gymnastic exercises is given by Oribasius. (Med. Collect. vi, 13.) It is taken, however, from Galen's second book of 'Hygiene.' See a similar account in Aëtius (iii, 1), and Avicenna (i, 3, 2.) The object of it, according to Alexander Aphrodisiensis, was to soften the parts so that they might not be ruptured. (Prob. i, 119.) To rub the body with oil was a general practice of the ancients before strong exercises of every kind. Hence Horace characterizes an inactive person by his dread of oil, "Cur olivum Sanguine viperino cautius vitat?"—that is to say, as his commentator Acron COMM.

COMM. explains it, "Cur vitat olivum, id est oleum, quo unctus tutius natet et luctetur?" The poet alludes to the practice in another place: "Ter uncti Transnanto Tiberim." It appears from Martial that a composition of oil and wax, called *ceroma*, was sometimes used for this purpose:

> "Vara nec injecto ceromate brachia tendis."
>
> (Epigr. vii, 32.)

According to Thucydides, the Lacedemonians were the first who rubbed their bodies with oil before wrestling. (i, 1.) Pliny mentions the use of oil before the gymnastic exercises as a luxury introduced by the Greeks. It appears from him that cheap aromatics were sometimes added to the oil. He further relates that some barbarous nations used butter instead of oil. (Hist. Nat. xi, 41.)

Athenæus mentions that Antiochus Epiphanes supplied the wrestlers at Daphne with oil of saffron, of marjoram, and the like. (Deipn. v.)

Lucian makes Solon say to Anacharsis, that oil produces the same effect upon the living body as upon leather, softening it, and rendering it stronger and less apt to break. (Anacharsis.)

The poets describe Venus as preparing herself for exercise by being rubbed with fragrant ointments, whereas Minerva disdained to use anything but common oil. See Callimachus (Lav. Pall.) and Sophocles (ap. Athen. Deipnos. xv, 35.)

The Roman emperors, and other luxurious persons, often made use of perfumed ointments instead of oil. See Suetonius (in Vita Caligulæ), Lampridius (in Vita Heliogabali.) It would appear that under the empire the people of Rome were supplied gratuitously with oil in their public baths. (Lamp. c. 24, and Burman, de V. R. c. iii.)

SECT. XVI.—ON EXERCISES.

Exercise is a violent motion. The limit to its violence should be a hurried respiration. Exercise renders the organs of the body hardy and fit for their functional actions. It makes the absorption of food stronger, and expedites its assimilation; and it improves nutrition by increasing heat. It also clears the

pores of the skin, and evacuates superfluities by the strong movement of the lungs. Since, therefore, it contributes to distribution, care ought to be taken that neither the stomach nor bowels be loaded with crude and indigestible food or liquids; for there is a danger lest they should be carried to all parts of the body before they are properly digested. It is clear then that exercise ought to be taken before eating. The colour of the urine will point out the proper time for exercise. When it is watery, it indicates that the chyme absorbed from the stomach is still undigested. When it is of a deep yellow colour, and bilious, it shows that digestion had been long ago accomplished. When it is moderately pale, it indicates that digestion has just taken place; and this is the proper time for exercise, after having evacuated whatever excrementitious matters are collected in the bladder and bowels.

COMMENTARY. The remarks of our author on the effects of exercise are exceedingly pertinent and comprehensive. See, in like manner, Aëtius (iii, 2), and Oribasius (Med. Collect. vi, 11.) But Galen is the great authority on this subject, which he treats of very fully and philosophically, in the second book of his 'Hygiene.' He agrees entirely with Hippocrates, that the proper time for exercise is before a meal, because, the excrementitious superfluities being thereby evacuated, the body is in a fit condition for receiving a new supply. He explains, however, afterwards, that it is after the digestion and distribution of a preceding meal have been accomplished that exercise will be most proper. COMM

According to Haly Abbas, exercise is useful for three purposes: 1. For rousing the innate or natural heat, whereby the processes of digestion and distribution are accelerated. 2. For opening the pores of the body, and evacuating its superfluities. 3. For strengthening and rousing the animal actions, by the friction it occasions. (Theor. v, 2.) Avicenna gives nearly the same statement of the good effects of exercise. Haly Abbas forbids exercise immediately after dinner. He adds, that exercise taken immediately after a meal makes the food descend to the intestines, where it is absorbed by the veins before it is properly concocted, and thereby the liver becomes loaded with crudities. (Pract. i, 3.)

COMM. Alsaharavius recommends exercise before a meal, but advises it not to be continued after one feels fatigued and languid. (Theor. ii, 2.) The same rule is distinctly laid down by Rhases. (Contin. xxxiii.)

It appears that, instead of taking exercise after food, the ancients were in the practice of indulging in a short sleep after their dinner or mid-day meal. See Plautus (Mostell. ac. iii, sc. 2, l. 8), and the note of Meursius (Ed. Gronov.) Homer says that it is beneficial to old men to indulge in sleep after the bath and taking food. (Galen. Hyg. 1.)

Plutarch mentions that Cicero was cured of debility of the stomach by taking moderate exercises. (In vita Cicer.)

It was one of the extravagant opinions of Erasistratus, that exercise is not at all necessary for the health of the animal frame.

SECT. XVII.—ON THE KINDS OF EXERCISE.

The common effect of all kinds of exercise is to produce an increase of the natural heat of animals. But each species has something peculiar to it. Strong, that is to say, violent exercise gives vigour to the muscles and nerves: such are digging, and lifting a very heavy burden, while one remains in the same spot, or moves about; or lifting small weights and walking about as much as one can. Of this kind, is the exercise of scaling a rope, and many others of a like kind. The swift kinds of exercise are such as do not require strength and violence, namely, running, fighting with one's shadow, wrestling with the extremities of the hands, the exercise with the leather bag, and that with the small Ball. This last is compounded of intension and velocity; and such exercises as are intense may become violent by adding velocity to them. Besides, some kinds of exercise bring the loins into action, and some the hands or legs; others the spine or the chest alone, or the lungs. And exercise ought to be carried on until the body becomes distended, and the skin of a florid hue; and until then, the motions ought to be strong, equable, and spirited, upon which you may see warm sweat, mixed with vapour, break out. It will then be time for you to stop, when any of the symptoms which I have mentioned have undergone a change, namely, when the bulk of the body

becomes contracted, or when the florid colour of the skin declines. And, should any of the motions remit, it will then be time to stop immediately; or, if there should be any change in the quantity or quality of the perspiration; for if it should become smaller in quantity, or colder, we must desist, and, besmearing the body with oil, endeavour to restore it. It will then be proper to use the Restorative friction, as the masters of gymnastics are wont to practise.

COMMENTARY. We shall now give a brief account of the ancient exercises, some of which are altogether omitted by our author. COMM.

The *σκιομαχία* is thus explained by Cornarius: "Porro *σκιομαχίαν* accipio umbratilem pugnam, quâ quis privatim domi aut sub umbra, non in propatulo se exercet, ac veluti præparat ad justam pugnam publicè faciendam." (Notæ in Paul. Ægin. h. l.) This account, however, does not agree with that of Oribasius, who describes it as a mock encounter at boxing and jumping with one's own shadow. (Med. Collect. vi, 29.) It is thus described in the Latin translation of Avicenna: "Et ex eis est, insequi umbram suam, ut ipsam percutiat in capite, et manus ad invicem percutere." (i, 3, 2, 2.) It is mentioned in this sense by Plato (de Legibus, vii), by Plutarch (Probl. Conviv. vii), and by Achilles Tatius (p. 115.) Juvenal probably alludes to this sport. (Sat. vi, 246.) We have therefore translated it, "fighting with one's own shadow."

The *ἀκροχειρισμὸς* is thus described by Scaliger: "Est autem *ἀκροχειρίζειν* luctæ pars, cum primoribus tantum digitis insertis roboris faciunt periculum." (Poet. i, 22.) Suidas explains it thus: "A man taking hold of his antagonist's fingers, strove to break them, and did not give over until he compelled him to yield." The term occurs in Aristotle. (Eth. Nicom. iii, 1.) See also, Athenæus. (Deipnos. iv, 13.) It is called *ἀκροχείρισις* by Hippocrates (De Diæta. ii, 42), who says it reduces the body.

The exercise with the *κώρυκος*, or leather bag, is described by Oribasius in the following manner: A bag filled with flour or sand was suspended from the top of the house, on a level with the navel; it was then pushed forwards with the hands to the extremity of the rope, and, as it recoiled, the person performing the exercise retreated backwards, so as to escape from it. (Med.

COMM. Collect. vi, 33.) This exercise is mentioned by Hippocrates. (De Diæta, ii.) Cornarius and the translator of Hippocrates confound it with the *follis* of the Romans; but Mercurialis clearly shows that they were quite different. The *follis* was a leather ball, inflated with air; such is the description of it by Cælius Aurelianus: "Follis erat pila magna ex aluta confecta, soloque vento repleta." Martial represents it as a becoming exercise for boys or old men:

> "Ite procul juvenes, mitis mihi convenit ætas,
> Folle decet pueros ludere, folle senes."
>
> (Epigr. xiv, 45.)

They were different from the *pila magna* and *parva;* that is to say, the large and small ball. These balls were of different sizes, and were played with in various ways. They are minutely described by Oribasius. (Med. Collect. vi, 32.) See also Horace (Sat. ii, 2), and Martial (Epigr. iv, 15.) See a most learned and accurate account of all these sports in Mercurialis. (De Arte Gymnastica, ii, 4.) Galen has written a treatise on the exercise of the parva pila. To this class of exercises we may refer *the pitching of a stone,* which is mentioned by Avicenna.

Our author has neglected to make mention of the *halteres* in this place, but recommends the exercise for the cure of elephantiasis. (iv, 1.) It is described by Galen, who says, it can be made to exercise the spine transversely. (De Sanit. tuend. ii, 11.) The exercise with them is thus described by Potter: "The exercise of leaping they sometimes performed with weights upon their heads or shoulders, sometimes carrying them in their hands; these were called ἁλτῆρες, which, though now and then of different figures, yet, as Pausanias reports, were usually of an oval form, and made with holes, or else covered with thongs, through which the contenders put their fingers." (Antiquities of Greece, c. 20.) Mercurialis describes them as masses or weights of different materials, and of such a size as that they could be held in the hands. Ropes, too, he adds, were often fastened to them, to hold with. (De Arte Gymnast. ii, 12.) The Pythagoreans were fond of this exercise. (Iamblichus de Vita Pythagoræ, c. 21.)

The *funambulatio* consisted merely in scaling ropes, which, as we may suppose, was done in various ways. See Mercurialis (iii, 5), and Baccius (de Thermis, viii, 7.)

The ἐκπλεθρίζειν, as Galen and Avicenna explain, consisted

in running round the plethrum, or sixth part of the stadium, and always contracting the circle of one's course, until one stopt in the middle. The πιτυλίζειν, as the same authors explain, consisted in walking upon one's toes, and tossing one's hands backwards and forwards. COMM.

The *cricilasia* appears to have been a large hoop, or circle, which was rolled on the ground. Even Mercurialis admits the obscurity of Oribasius's description of it. (Med. Collect. vi, 26.)

The *petaurum* was a seat suspended by ropes, in which seat the person taking the exercise sat, and was tossed about by assistants. It is mentioned by Juvenal (Sat. xiv), and Martial (Epigr. xi, 22.)

Antyllus thus describes the effects of *equitation* on the human frame: "It strengthens the body, especially the stomach, more than any other mode of exercise; it clears the organs of the senses, and renders them more acute; but it is most inimical to the thorax." Oribasius (Med. Collect. vi, 24), Pliny (Hist. Nat. xxviii, 4), and Aëtius agree with Antyllus as to the good effects of equitation on the stomach. Hippocrates and Cælius Aurelianus state that equitation is hurtful in disease of the hip-joint. All agree that riding on horseback is hurtful in diseases of the chest.

Of ἀιώρα, or *gestation*, there were various modes. That in a carriage was very ancient, and is often mentioned by the medical authors. It appears from Pliny (Hist. Nat. xvi, 42), that carriages were generally made of fir, and that the axles were of ilex, mountain ash, or elm. Sometimes, however, the whole chariot was adorned with gold and silver. (Pliny, Hist. Nat. xxiv, 17.) They appear to have been often covered in with skins. (Plutarch, Prob. Roman.) They were generally drawn by horses or mules, sometimes by oxen, and occasionally by slaves. They were so constructed that a person could either sit or lie, according to pleasure. (Galen, Hyg.) At first, according to Pliny, they had only two wheels; the Phrygians, he says, added two more; and Hippocrates mentions that the Scythians introduced the use of six-wheeled carriages. The sedan and chair are often mentioned by the Latin poets, as well as by the medical writers. It is sufficient for our purpose to state that they were so constructed, that one could either sit or lie in them. They sometimes had windows, formed from the lapis specularis. (Juvenal, Sat. iv, 21.) Navigation, or sailing in ships and boats, is often mentioned by

COMM. ancient authors as a remedial measure. It was practised on the sea or in rivers. According to Aëtius, gestation in general ventilates the natural heat, produces excitement, dispels collected humours, strengthens the frame, and rouses the actions when in an indolent state. (iii, 6.) Celsus has an interesting chapter on gestation. The following rule for the application of it is very judicious: "Gestatio quoque longis et jam inclinatis morbis aptissima est; utilisque est et iis corporibus quæ jam ex toto febre carent, sed adhuc exerceri per se non possunt; et iis quibus lentæ morborum reliquiæ remanent, neque aliter eliduntur." Upon the whole, he holds it to be a doubtful practice in ardent fever, although sanctioned by the authority of Asclepiades Bithynus: at all events, he insists that gestation is improper when there is any local pain or swelling. After characterizing the different modes of gestation, he remarks respecting them: "Levia quidem genera exercitationis infirmis conveniunt: valentiora vero iis qui jam pluribus diebus febre liberati sunt; aut iis, qui gravium morborum initia sic sentiunt, ut adhuc febre vacent, quod et in tabe, et in stomachi vitiis, et cum aqua cutem subiit, et interdum in regio morbo fit; aut ubi quidam morbi, qualis comitialis, qualis insania est, sine febre, quamvis diu, manent." (ii, 15.)

Galen eulogises *hunting* as being an excellent exercise to the body, and an agreeable recreation to the mind. He says, that by the mental excitement which it produces, many have been cured of dangerous diseases. (De parva Pila.) Rhases mentions, that during the prevalence of a certain pestilential epidemic, it was observed, that huntsmen were the only class of people who escaped its contagion. (Contin. iii.) The ancients have transmitted to us many elegant treatises, both in prose and in verse, on this delightful recreation. Those of Xenophon, Oppian, Gratius, and Nemesianus will be found particularly interesting. The younger Pliny attributes his recovery from a certain complaint, to the exercise of hunting. (Epist. v, 6.)

The occupation of *fishing*, according to Plato, produces neither mental nor bodily excitement. (In Sophista.) Galen and Avicenna briefly mention it as an exercise which may tend to the preservation of health; but neither of them appears to have attached much importance to it. The poet Oppian, however, in his 'Halieutica' has celebrated the pleasures and dangers of fishing,

with all the enthusiasm of an Isaac Walton, or a Washington Irving. COMM.

Oribasius states that *swimming* tends to warm, strengthen, and attenuate the body. He says that swimming in the sea is particularly applicable in cases of dropsy, eruptive diseases of the skin, and elephantiasis. It is apt, however, he adds, to prove injurious to the head, and also to the nerves when too long continued. We have mentioned in the fifteenth Section, that the ancients got their bodies rubbed with oil before going into the water. Celsus gives nearly the same account of it, as a remedy for the cure of diseases, as Oribasius. Swimming may be said to have been the national exercise of the ancient Romans. Horace in particular makes frequent allusions to it as an invigorating and manly exercise. The Romans had artificial lakes or ponds connected with their baths, for the purpose of swimming. (Pliny, Epist. v, 6.)

Jumping and *dancing*, according to Oribasius, occasion a determination downwards, and hence, they may prove useful in cases of amenorrhœa. (Med. Collect. vi, 31.) It appears from a case related in a work attributed to Hippocrates, that jumping was had recourse to, to procure abortion. (De nat. Pueri.) The most eloquent encomiast of dancing is Lucian, who has written an ingenious treatise in praise of it. He contends that it is an excellent training, not only to the body, but also to the mind! He refers to Socrates and other sage philosophers who practised dancing. (De Saltatione.) The Pyrrhic dance of the ancients was particularly celebrated. It was performed by armed men. See Vossius (de Nat. Art. i,) and Athenæus (Deipn. xiv, 19, ed. Schweigh.)

On the Apotherapia or Restorative process, see Galen (Hyg. iii); Oribasius (Med. Collect. vi, 16); and Avicenna (i, 3, 2.) It consisted simply in rubbing the body softly and moderately with oil. According to Galen, the object of it was to relieve the feelings of lassitude, and prevent any bad effects from the exercise. Mercurialis states that, when applied after the bath, it was with the intention of preventing the humidity from being dissipated. Odoriferous ointments and powders were sometimes used instead of the oil. (De Arte gymnast. i; also Baccius de Thermis, 10.)

SECT. XVIII.—ON THE KINDS OF FRICTION.

Hard friction contracts, and soft relaxes; so that those persons that are relaxed should be rubbed hard, and those that are immoderately constricted, softly; and when, neither in the one state nor the other, it is clear that neither the one mode of friction nor the other should be had recourse to, but as much as possible either extreme ought to be avoided. For much and hard friction diminishes the bulk of the body, whilst, on the other hand, little and soft distends it. If the three different kinds of frictions as to quantity be joined to the same number as to quality, they will produce nine combinations, as is stated below. For one of the kinds, as to quantity, for example *much*, being complicated with the three differences as to quality, I mean the *hard*, the *soft*, and the *moderate* as to hardness, will produce three combinations; and, again, the *little* being joined to the other three will produce three more; and the *moderate* as to quality being complicated with the same three, will produce three more, as is shown below:

QUANTITY.		QUALITY.
Much	and	Hard.
Much		Soft.
Much		Moderate.
Little	and	Hard.
Little		Soft.
Little		Moderate.
Moderate	and	Hard.
Moderate		Soft.
Moderate		Moderate.

COMM. COMMENTARY. The brief but comprehensive rules of Hippocrates for the application of friction, are thus given in the language of Celsus: "Hippocrates dixit, frictione, si vehemens sit, durari corpus; si lenis, molliri; si multa, minui; si modica, impleri." Celsus adds, that, according to circumstances, the body may be braced by it, if relaxed; may be softened, if indurated; may have its superfluities expelled, if loaded with plethora; and have nourishment attracted to it, if emaciated. He remarks, that it is mostly applicable in the decline of a disease. His other directions for the application of it are very apposite. (ii, 14.)

Pliny delivers the rules of Hippocrates in nearly the same words as Celsus. (Hist. Nat. xxviii, 14.) COMM.

Our author's account of friction is taken from Oribasius (Med. Collect. vi), or from Aëtius (iii.) All, however, are indebted to Galen, who handles the subject most scientifically. (Hyg. ii.)

Similar directions are given by Avicenna (i, 3, 2), and by Haly Abbas (Theor. v, 12.) Averrhoes gives the sum of the directions laid down by Galen and the other authorities. Strong friction, he says, braces and hardens the body; weak, rarifies and softens; moderate, operates in an intermediate degree. Besides, he adds, hard friction diminishes obesity; moderate, on the other hand, tends to remove emaciation. (Collect. ii, 3.)

It was a general practice of the ancients to have recourse to friction in the morning and evening. Oribasius has many excellent observations on this practice. (l. c.)

SECT. XIX.—ON VOCIFERATION, OR THE EXERCISE OF THE VOICE.

In the exercise of the voice, regular and gentle modulation can contribute nothing to health, but the utterance of louder tones is beneficial, and is therefore to be practised. For, much air being inhaled thus by respiration expands the chest and stomach, and dilates and extends all the pores of the body. Wherefore, even in reading, it promotes the excretion of redundant humours, to those who read in a high tone, by inducing sweats; while in those who read with a moderate tone it promotes the insensible perspiration over the whole frame. For by attenuating the excrementitious matters which are hawked up, the saliva, mucus, and phlegm are discharged and consumed. And to those who stand in need of warming, on account of their frigidity, what mode of relief can be more proper than the action of respiration? Such persons ought therefore to read frequently, and, relaxing the whole body, so as to distend the windpipe and all the other passages of air, endeavour to utter the loudest sounds. And yet we must not have recourse to the exercise of the voice rashly, and without consideration, nor when the system is filled with depraved humours, or the stomach loaded with crudities, lest noxious vapours be thereby distributed over the whole body.

COMM. COMMENTARY. These remarks of our author are very pertinent; but Oribasius has given a more comprehensive view of the subject, from the works of Antyllus. He thus describes the mode of performing vociferation: The bowels being evacuated, the person's body is to be first rubbed, and then the inferior parts and the face are to be sponged with water. He is to begin talking, at first, in a moderate tone, while at the same time he walks about, and afterwards, straining his voice to a louder tone, he is to repeat certain verses. (Med. Collect. vi.)

Plutarch gives nearly the same account of it. He commends vociferation as giving strength to the internal parts, increasing the vital heat, purifying the veins, attenuating the blood, and dispelling the humours. He cautions, however, not to strain the voice to too great a pitch, lest it occasion rupture of any of the vessels. (De Sanit. tuendâ.)

Vociferation, according to Aëtius, is an exercise of the chest and the organs of speech, improving the vital heat; attenuating and strengthening the solid parts of the body. He recommends it for the cure of asthma, orthopnœa, phthisical and chronic pains of the chest, or apostemes when they burst; also, in tertian intermittents, and affections of the stomach attended with vomiting. It is unsuitable, he says, in complaints of the head. (iii, 5.)

Celsus recommends loud reading for curing weakness of the stomach. (i, 8.)

Galen scarcely takes any notice of vociferation, except that, in one place, he states that it exercises the chest and lungs. (De Sanit. tuendâ, ii, 11.)

Avicenna, in giving an account of vociferation, follows Aëtius. He says, that it exercises the parts about the mouth and chest; and hence, that it improves the complexion. He likewise cautions us not to prolong loud enunciation, lest it occasion a rupture of the vessels. He directs us to begin moderate, and then strain the voice gradually, and afterwards to allow it to sink by degrees. (i, 3, 2.)

SECT. XX.—ON LASSITUDE FROM EXERCISES.

That species of lassitude called the Ulcerose is occasioned by a collection of thin and pungent superfluities in the body. In the

Tensive there is scarcely any superfluity in the system, but the state of the muscles and nerves is such that they appear to be stretched. The Inflammative, in which we feel as if the parts of the body were bruised or inflamed, happens when, being much heated, the muscles attract the surrounding superfluities. There is a fourth species, occasioned by an unnatural dryness of the muscles, in which the body, when stripped naked, appears squalid and constricted, and is averse to motion. The cure of the ulcerose species consists in dispelling the superfluities by much and soft friction with plenty of oil devoid of astringency. The indication of cure in the second or tensive species is relaxation, which may be accomplished by means of little and soft friction with oil heated in the sun; by quietude and rest, by tepid baths, and remaining for a considerable time in the warm water; for, if you repeat the bath two or three times in succession, you will confer so much the greater benefit. In the third species, or the inflammative, there are three indications of cure: the discharge of the superfluity, the relaxing of the constriction, and the cooling of the inflammatory state. Plenty of tepid oil, the softest friction, and remaining long in a bath of a moderate temperature, remove lassitudes of this description. Long-continued quietude is also proper, and repeated inunction. The treatment of the fourth differs in no respect, for the first day, from that of the third, except that the water ought to be hotter, so as to contract gently; and on the second, the restorative kind of exercise must be had recourse to; and when in the bath, let the person straightway leap into the cistern of cold water. All those affected with lassitude stand in need of wholesome food.

COMMENTARY. There is a short treatise on this subject, among the minor works of Theophrastus. He states that, as the excess of motion in this case has produced a preternatural dryness of the body, the indication of cure is to humectate, that is to say, to dilute, by baths and drinks. The work contains many ingenious observations; but our limits do not admit of our giving a proper outline of it. COMM.

Our author copies from Oribasius (Synops. v, 15); see, also, Aëtius (iv, 55 et seq.) They all, however, are indebted to Galen. (De Sanit. tuend. iii, 7.) The ulcerose lassitude, he says, arises from a collection of excrementitious superfluities, which

COMM. are produced by the melting of fat and muscle. In the second species, called the tensive, there is no collection of humours, but the muscular fibres are excessively stretched. The third species, or the inflammative, is characterized by a sensation, as if the parts affected were bruised or inflamed, and happens when the muscles, being excessively heated, attract the superfluities from the surrounding parts. From the pain being deep seated, it has been called ostalgia. He adds a fourth species, being a case somewhat different from all those we have been describing. It is the contrary state to that of the inflammative, the body appearing squalid and contracted. The first case, as it is connected with redundance of humours, is to be cured by discutients; and hence the proper remedy for it is much friction, with emollient oils wholly devoid of astringency. He also approves of the gentle exercise called the restorative. The second species, or the tensive, is to be cured by gentle friction, with emollient oils heated in the sun; by complete quietude, and the frequent repetition of the tepid bath. In particular, unction with oil is proper. The third species, as it is occasioned by violent motions, and is attended with excruciating pains, is to be cured by the gentlest friction, with the most emollient oils; by the most perfect rest, and the tepid bath. The fourth species, characterized by squalor and constriction of the skin, is to be treated by the hot bath, to warm and invigorate the skin, then by soft and slow motions and friction; and then again by the hot bath. But, he adds, the patient must straightway leave the cistern of the hot bath, and plunge into that of the cold, but not remain long in it. The diet, in all these cases, is to be restricted and cooling, especially in the Inflammative.

As all the subsequent authorities, whether Greek or Arabian, adopt the views of Galen, we need not enter into the detail of their plans of treatment. See Psellus (Opus Medicum); Avicenna (i, 3, 2); Rhases (Contin. xxxi); Alsaharavius (Pract. xxxi, 11); Averrhoes (Collig. vi, 8; Collect. ii, 15.) The bath, emollient friction, diluent food, and quietude are the remedies generally recommended by all the ancient authorities; and they are directed with a nice discrimination that cannot be too much admired. Syrasis, one of Avicenna's expositors, gives the rules of treatment with great judgment.

Prosper Alpinus gives a fair account of the ancient doctrines

on this subject. (Meth. Med. iv, 16, and de Præsag. Vita et Morte, ii, 21.) COMM.

SECT. XXI.—ON CONSTRICTION OF THE SKIN.

Constriction is occasioned either by obstruction or contraction of the pores. Obstruction is produced either by the quantity or thickness of crude and indigested humours, and contraction by such things as are cold or astringent, or desiccative. Upon stripping the body, the affection is at once recognized by the paleness, hardness, and contraction of the skin, and by the body's being heated with difficulty during exercise. Calefacient remedies are the proper cure for this state of body, and therefore we must have recourse to the strongest exercise and the hottest baths, and the time of remaining in the cold bath must not be long, nor must the water be very cold. And when about to put on their clothes, let their bodies be anointed with a sweet and thin oil, of a moderately heating quality. Obstructions of the skin are also properly cured by the oil of dill, (more particularly if the dill had been green,) and by the oil of black poplars.

COMMENTARY. This Section is taken from Oribasius. (Synops. v, 16.) But a somewhat fuller account is given by Galen. (Hyg. iii, 10.) Like our author, he states, that this affection is occasioned, either by a collection of thick viscid humours in the body, or by contraction, that is to say, spasm of the cutaneous pores. It is generally brought on, he says, by exposure to cold, or going into an astringent bath. He gives very minute directions about the treatment, recommending hot baths, and friction with oils of a calefacient and attenuant nature. See also Aëtius (iv, 46); and Actuarius (Meth. Med. iii, 16.) COMM.

Avicenna treats of it in the same terms as Galen. (i, 3, 3, 15.)

SECT. XXII.—ON SPONTANEOUS LASSITUDE.

Since the Ulcerose lassitude is occasioned by the ill digestion of acrid superfluities, if the cacochymy be small, the restorative

exercise will be sufficient; but if it be greater and deeper-seated, we must not permit such a one either to exercise or to take any motion whatever, but he must for one day remain without food, in a state of quietude and sleep; and then in the evening, when he has been rubbed with emollient unguents, and bathed in tepid water, we must give him wholesome food and some soup. And we must also not restrict him from wine, for nothing contributes so much to the digestion of half-digested humours as wine. Should the symptoms be removed by means of the aforesaid treatment, we may allow the man to return to his usual employments; but if on the following day they should still remain, we must bethink ourselves of a more potent remedy. If his strength be good, we must have recourse either to phlebotomy or purging, having first determined which of these remedies we shall try. If he be weak, we must not bleed, but may purge him moderately. If there be many crude humours in the system, we must neither bleed, nor purge, nor exercise, nor move at all, nor try the bath; but we must keep him in a state of perfect quietude, and give him food, drink, and medicines of attenuating and incisive qualities, without being of a manifestly heating nature. We may give vinegar and honey, and occasionally some ptisan or honied water. And since, in such persons, the lower belly is apt to become swelled and distended with wind, and whatever food is taken to be converted into flatulence, it will be better to give some pepper along with the food. It will be better, too, to use the composition called Diospoliticus, and that simple medicine which consists of three kinds of peppers. Oxymel is also most proper. Let them likewise use a drink made from honey, particularly when it begins to become acid; and such wines as are gently acid, and such articles of food as are attenuant without being heating, as capers, if taken with vinegar and honey, or vinegar and oil. When the Tensive species of lassitude takes place without exercise, it indicates that a plethora distends the solid parts of the body. If the fulness be occasioned by blood, it will be best to open a vein, or scarify the ankles. If the Inflammative lassitude be spontaneous, it will not endure a delay of a few hours, much less of two or three days, for it straightway induces a strong fever, unless one anticipate by letting blood. It will be best, if possible, to abstract blood twice in one day; for if care be taken that the first bleed-

ing do not occasion swooning, it will be of less consequence whether or not it occur after the next. Those who are not bled will be fortunate indeed if they escape with the life.

COMMENTARY. These judicious observations are taken from Oribasius (Synops. v, 21.) See also Galen (de Sanit. tuendâ, iv); Aëtius (iv, 41); Avicenna (i, 3, 3, 16); Alsaharavius (Pract. xxxi, 2, 11); Rhases (Contin. xxxi); Averrhoes (Collig. vi, 14.) COMM.

All the authorities recommend nearly the same methods of treatment. Galen's account of the subject is full, complete, and satisfactory, but so lengthy, that we cannot venture even upon an abstract of it. He gives proper directions for the physician to endeavour to find out the cause of the lassitude, and to remedy it accordingly. It is often connected, he says, with retention of the menstrual or hemorrhoidal evacuation, or the stoppage of some customary discharge. When attended with inflammatory symptoms, he is very urgent in recommending immediate venesection, without which, as he remarks, the patient cannot escape with his life, unless he is saved by a critical evacuation, such as bleeding from the nose, or profuse sweating.

When, in the inflammative lassitude, the head is affected, Aëtius directs us to open the cephalic vein; when the chest or back, the basilic; and when the whole body equally, the median. He recommends also cooling herbs, such as beet, mallows, lettuce, and the like, with ptisan and tepid water. He forbids the use of cold water. After the third day, if the patient is convalescent, he allows a thin weak wine, much diluted.

Averrhoes approves very much of Galen's directions respecting the treatment, except that the peppers recommended by him had not been found to answer in his climate (Cordova). Instead of them, he directs cinnamon, amber, cassia lignea, and similar aromatics to be given.

Avicenna joins Galen in cautioning the physician to be guarded in allowing his patient to take much food, as the veins being emptied by the remedies applied for removing the lassitude, greedily absorb the chyle before it is properly concocted.

SECT. XXIII.—ON THE REGIMEN OF OLD PERSONS.

Old age is dry and cold; and its correctives are calefacients and diluents compounded with them. Friction is to be applied to the aged, but so as not to occasion lassitude. To such as are weak, some such course of diet as the following is to be prescribed: about the third hour, a small bit of bread with Attic honey; and afterwards, about the seventh hour, after having undergone friction, and taken exercise and baths suitable to old men, they must first get such things as are of a laxative nature, and afterwards fish or fowls; and then for supper, such things as are wholesome, and not apt to spoil in the stomach. I also do not forbid them to use wines prepared with honey, particularly such persons as are suspected of being threatened with the stone or gout, and in that case, a little parsley may be added. If phlegm be gendered in the stomach, we must of necessity apply such remedies as will remove it, and return immediately to a diluent diet: we must give them ripe figs in preference to every other kind of food, and if during the winter, dried figs, unless they complain of unpleasant symptoms in the right hypochondrium. When serous and pituitous recrements collect in the bodies of old men, we must promote the discharge of urine every day, and soften the belly, principally by giving oil before a diet. It is obvious, that all pot-herbs ought to be eaten before all other food, with oil, pickles, or olives and damascenes seasoned with salt. When the belly is bound, the herb mercury and the bastard saffron will relieve it. Turpentine also is proper in such cases. It may be given sometimes to the bulk of a Pontic walnut, and sometimes of two or three. Oil also in a clyster is most useful to those who are constipated.

COMM. COMMENTARY. This Section is copied from Oribasius. (Synops. v, 18.) See also Aëtius. (iv, 30.) These directions are all borrowed from Galen (Hyg. v), who has treated of the subject with his characteristic elegance and good sense. The following is a brief exposition of his views of practice in such cases: "Old age is cold and dry, and is to be corrected by diluents and calefacients, such as hot baths of sweet waters, drinking wine, and

taking such food as is moistening and calefacient." He strenu- COMM.
ously defends the practice of allowing old persons to take wine, and gives a circumstantial account of the Greek and Roman wines best adapted to them. In the case of old persons he approves of three meals in the day. He recommends the bath to be taken before dinner, which should consist of sea fish. He properly expresses his disapprobation of giving them aloetic pills to remove constipation of the bowels, and advises rather that they should be kept open with laxative herbs and oily clysters, in the manner stated by our author. Aëtius remarks, in like manner, that old men are much hurt by strong purgatives, which only increase the disposition to costiveness. All that is required in such cases, he remarks, is to lubricate the rectum with an injection of oil. The Arabians follow closely in the same strain. Alsaharavius recommends old persons to drink strong diuretic wines. He also approves of the tepid bath, and friction with emollient oils. He disapproves of much exercise and of taking aloetic pills, instead of which he directs oily clysters and laxative herbs. (Pract. xxvii, 10.) See more particularly Averrhoes' Commentary on the Cantica of Avicenna (tr. i.) They agree that if an old man had been accustomed to be frequently bled, the practice is not to be wholly laid aside. Avicenna particularly approves of a milk diet. He recommends old red wines, but forbids such as are new and sweet. (i, 3, 3.) Even Plato, the philosopher, permits old men to take a liberal allowance of wine, which he pronounces to be the restorative of youth, and the corrective of the austerity and despondency of old age. (leg. ii.) See also Athen. (Deip. x, 54, ed. Schweigh.)

According to Hippocrates, old men bear abstinence better than those of any other period of life. (Aphorism.) The reason of this assigned by his Commentators, Theophilus and Damascius, is, that their innate heat is lower than at any other age, and consequently requires less pabulum to support it. (Ed. Dietz. t. iv, 277.)

SECT. XXIV.—FOR A WRINKLED STATE OF THE BODY.

A wrinkled state of the body may be removed by the farina of bitter tares, mixed with white vine.

Another abstergent composition (smegma), to be frequently rubbed into the skin: fat figs bruised with bryony, and the burned powder of tares, the shells of the cuttle-fish (sepia), mixed with a small quantity of honey.

COMM. COMMENTARY. This Section is taken from Oribasius. (Synops. v, 20.)

SECT. XXV.—TO MAKE THE PERSPIRATION FRAGRANT.

The perspiration may be rendered fragrant by mixing the leaves of the cypress, pounded dry, and the bark of the pine in the same ointment. One ought also to remember in the morning, immediately after being dressed, to taste a small quantity of cassia or savin.

COMM. COMMENTARY. This is copied from Oribasius. (Synops. v, 21.) See also Rhases (ad Mansor. v, 53.) Rhases recommends the heads of cardui for food, and the seeds of juniper or cassia lignea in the drink. His advice further is to rub the body with pastils of roses, and to drink aromatic wine.

SECT. XXVI.—TO WARM THE HABIT.

Since even the habit must be warmed, it will be proper to use a preparation of a heating nature when in the bath. Let it contain calamint, majoram (sampsuchum), hyssop, bay berries, rosemary, the stone pyrites, salts, the burnt lees of wine, nitre, pumice-stone, each in proper proportion; also a small quantity of mustard, staves-acre, and the seeds of the thymelæa (granum cnidium). After the bath, use a warm restorative (Acopum), and drink a yellow old wine, having taken a sweet drink (*propoma*) from wine and honey, pepper, rue, and the like.

COMM. COMMENTARY. All this Section is taken from Oribasius, excepting the part relating to the draught or Propoma. The nature of the Propoma will be explained in the Seventh Book. We may just mention that it was a sort of *liqueur*.

SECT. XXVII.—FOR PALENESS.

Paleness of the body is diminished by a merry course of life, and grateful food, by mixing together radishes, leeks, and the green chick-pea. The juice of the sweet pomegranate taken internally, restores the complexion. Oil, in which the root of the white vine (bryonia) has been long boiled, is likewise proper. This gives tone to the body. For detergent applications, form pastils of detergents, as farina, the bulb of the narcissus, and the root of the bryony. The root also of the bitter almond, if taken in abundance, will improve the colour, and likewise the fruit boiled in water and used for a bath.

COMMENTARY. This Section is taken from Oribasius. (Syn. v, 23.) COMM.

SECT. XXVIII.—ON LIVIDITY.

Livid spots are prevented from forming on old men, by rendering their skin thick and hardy, and by warming the habit. In order to dispel them, the black places should be rubbed in the bath with salts, and fomented with sponges steeped in a decoction of radish or wormwood.

COMMENTARY. This is taken from Oribasius. (Synops. v, 24.) COMM.

SECT. XXIX.—PRESERVATIVES OF THE TEETH.

The teeth will not decay if the following things be attended to: in the first place, to avoid indigestion, and frequent repetitions of emetics. Guard against such food as is hurtful to the teeth, as dried figs, honey boiled, so as to become very hard, dates which are difficult to rub down, and all glutinous substances; likewise such things as are difficult to break, and may thereby loosen the teeth; in like manner also, such substances as set the teeth on edge, and everything which is cold and putrid. The teeth also ought to be cleaned after supper.

COMM. COMMENTARY. This Section is mostly taken from Oribasius. (Synops. v, 25.)

Rhases gives similar directions. He forbids emetics, and recommends attention to keeping the teeth clean. He praises the following dentifrice: Of hartshorn, of the seeds of tamarisk, of cyperus, of spikenard, of each ℥j, of the salt of gem ʒij, to be pulverised, and the teeth rubbed with it. (Ad Mansor. iv, 21.)

SECT. XXX.—FOR DULNESS OF HEARING.

Dulness of hearing may be prevented by clearing away the sordes from the meatus, and by occasionally introducing into the ear a piece of linen dipped in a calefacient ointment (dropax), pressing it down, and then drawing it out; for this completely clears the opening, and at the same time, stimulates the sense of hearing. Afterwards, the meatus is to be plugged up with a piece of wool of the size of a tare for a day; and, when it is taken out, the meatus is to be anointed with the oil of almonds, of spikenard, or of chamomile, with the fat of geese, or a small quantity of ox gall. Again, after a time, rubbing mustard and figs together, introduce the collyrium thus prepared, for two hours; and then take it out and pour in oil heated in the hollow of the root of the asphodel.

COMM. COMMENTARY. This is taken from Oribasius. (Synops. v, 23.)

Rhases particularly directs great care to avoid indigestion, which, without doubt, is occasionally the cause of indistinct hearing. He recommends some almond oil to be introduced into the meatus, and cautions against exposure to cold wind. (Ad Mansor. iii, 23.)

SECT. XXXI.—ON DIMNESS OF SIGHT.

In order to avoid dimness of sight, when they plunge into cold water, people ought to open their eyes wide, for thereby the strength of their eyes will be much improved. They ought also to be careful not to hurt them by reading. Let them also avoid wine that is thick and sweet, such articles of food as ascend

upwards, whatever is of difficult digestion, and engenders crude and thick humours, the herb rocket, leeks, and everything whose pungency ascends upwards. Let them also avoid reclining long in a supine position, cold, winds blowing direct in the face, smoke and dust; and pour daily into the eyes an infusion prepared thus: for a month and a day, put green fennels into an earthen vessel smeared with pitch on the outside, and pour in rain water, and then taking out the fennels, keep the water laid up for use.

COMMENTARY. This is copied from Oribasius. (Synops. v, 27.) COMM. Rhases gives very copious and sensible directions on this subject, but many of them are the same as those given by our author. He forbids all gross and diffusible articles of food, and also thick wines. Although he cautions against reading books written in small characters, he recommends exercising the eyes by looking at large letters or pictures. He also recommends various collyria, containing antimony, tutty, calamine, camphor, and the like. (Ad Mansor. iv, 22.)

SECT. XXXII.—ON REPLETION.

Excess in diet is a very great error; for, even if the stomach should digest it properly, the veins, being over-filled, become affected, are distended and burst; they are obstructed, or filled up with vapours, and become much oppressed. In diseases nothing is worse than plethora of the veins; for, in fulness of the stomach, the offending matters may be evacuated either upwards or downwards, so that it is less pernicious than the other, and yet it is by no means desirable. But if there be too much food in the stomach, it must be immediately evacuated by vomiting, for there is a danger lest being digested it fill up the veins, more particularly if the person who is guilty of the excess be not attentive to the necessary evacuations. Let him vomit, then, before the food become spoiled; or, if there be any objection to vomiting, it will be of great consequence to bring about frequent discharges from the bowels; or otherwise, he should indulge much in sleep, and drink often of tepid water. When he has digested properly, and more especially if he has had evacuations by the bowels, let him have baths and fomentations, and let him drink

moderately of watery draughts, and eat some pickle. But should he neither have alvine evacuations, nor digest readily, and if his whole body be heavy, averse to motion, and sleepy, and if his mind be oppressed with unusual sluggishness, these symptoms indicate plethora of the veins; and, when lassitude supervenes to these, it will be proper to enjoin quietude until digestion in the stomach be accomplished, and then to evacuate by labour.

COMM. COMMENTARY. Our author, as usual, copies from Oribasius. (Synops. v, 28.)

Hippocrates describes accurately the bad effects of plethora, but at so great length that we cannot venture to give an outline of his practice. We may mention, however, that purging with hellebore, emetics, the warm bath, and venesection are his most powerful remedies. (De Diæta, iii, 16 et seq.)

Galen has also a treatise of considerable length on the same subject. Among the causes of plethora enumerated by him, we remark that he mentions the use of the warm bath after meals, whereby he holds that the system is overloaded with imperfectly concocted chyle. (De Plenitudine, and Meth. Med. ix, 5.) See also Rhases (ad Mansor. ii); Haly Abbas (Pract. i, 12); Alsaharavius (Pract. v, 4); Averrhoes (Comment. in Cant. Avicennæ); Avicenna (i, 2, 3.)

Alsaharavius says that plethora is marked by ruddiness of the body, heaviness, torpor, large veins, somnolency, a large face, and brawny limbs. It is usually accompanied, he adds, by impairment of the understanding, forgetfulness, heaviness of the head, weakness of sight, great pulsation of the arteries, and a disposition to epistaxis. He recommends a restricted diet, consisting of articles not very nutritious, exercise, the bath, along with friction, and medicines calculated to evacuate the prevailing humour, whether blood, phlegm, or bile.

Haly's account is very like our author's.

Rhases gives a good description of repletion, which, he says, is generally brought on by excess in eating and drinking, along with too much indulgence in sleep. Avicenna's description is similar.

SECT. XXXIII.—ON INTOXICATION.

To those who are intoxicated, vomiting is an immediate relief. It will be proper that they drink freely of water and honied water, so that they may vomit freely, and remove the uneasy feelings. After vomiting, let them use the bath, along with plenteous unction, and afterwards rest for some time, well covered up, until they have slept off their debauch.

COMMENTARY. These simple directions are extracted from Oribasius. (Synops. v, 33.) Hippocrates recommends an emetic after intoxication. (De Diæta, iii, 4.) COMM.

For the cure of intoxication Haly Abbas recommends the tepid bath, affusion of tepid water, and friction with oil. If headach prevail he directs cold rose oil to be poured on the head; or, if it is summer, cold water. After this the person is to be rubbed, and to take things of a cooling nature, such as prunes, tamarinds, and the like. (Pract. i, 8.)

Rhases recommends vinegar and water, or the like, for drink; the application of vinegar and oil of roses to the head, and camphor and water to the nose. He also approves of emetics, and of putting the person's hands and feet into cold water. He says one ought to sleep long before going into the bath. (Ad Mansor. v, 71 and 77.)

The practice of taking an emetic after a debauch is often alluded to in the works of the classical authors. Thus it is mentioned by Aristophanes in his 'Acharnenses.' Suetonius, in the lives of Vitellius and Claudius, states that these Emperors were in the practice of procuring vomiting, in order to relieve themselves from the effects of excessive eating and drinking. See also Pliny (Hist. Nat. xiv, 28.) Athenæus, upon the authority of Mnestheus, the Athenian physician, recommends that a person who has drunk wine freely should not go to rest until he has vomited more or less. He advises afterwards either the affusion, or bath of hot water. (Deip. xi, 67.) It appears, from Pliny, that the celebrated Asclepiades of Bithynia condemned the use of emetics, which were so common in his time. (Hist. Nat. xxvi, 7.) See also Celsus. (i, 3.)

SECT. XXXIV.—ON WRONG DIGESTION OF THE FOOD.

It contributes much to the health of those whose food spoils in their stomachs, that the offending matters be discharged downwards; and when they are not so discharged naturally, this operation ought to be promoted by gentle laxatives. Persons may, with advantage, take, before eating, an emetic from the drinking of wine, or must. They ought also to be counselled not to take food of a strong or offensive smell, nor such as easily becomes spoiled; but, on the contrary, such as is wholesome. To such persons, evacuations of the bowels at proper intervals, by means of gentle laxatives, are highly expedient.

COMM. COMMENTARY. See Oribasius (Euporist. i, 3, and Synops. v, 30.) This subject will be more fully treated of in the Third Book.

SECT. XXXV.—ON VENERY.

From sexual enjoyments, the following advantages may be derived: they relieve plethora, render the body lighter, promote its growth, and make it more masculine; they free the mind from the cares which beset it, and relieve it from ungovernable anger. Wherefore, the best possible remedy for melancholy is coition. Those also who are otherwise affected with mania it will restore to reason. It is also a powerful remedy for phlegmatic disorders, will restore the appetite to those who have lost it, and dispel continued libidinous dreams. The temperaments which are most adapted for venery are the hot and humid, and these bear it best. A dry and cooling diet, old age, and the season of autumn unfit for it. The diet, therefore, ought to be moistening and heating; and moderation as to labour and food ought to be observed. And as other kinds of labour are useful so also are the venereal, when taken in moderation; for they incite to the act, and, by the habit, procure some alleviation. But nothing is so much required as abundance of food, which also ought to be of a nutritious nature. Of fishes, the best are polypi, (which are otherwise supposed to incite,) and all the

class called mollusca; of pot-herbs, the all-good (horminum), hedge-mustard (erysimum), rocket (irio), and turnip. And the following are as medicines: of pulse, beans, chick-peas, Sicilian peas, kidney-beans and peas, which fill the body with vapours and abundance of food. Rue, as it concocts and dispels flatulence, blunts the venereal appetite. But I greatly approve of grapes, which supply the body with moisture, and fill the blood with flatus, which rouses to venery. He who is about to proceed to the act ought to guard against repletion, indigestion, lassitude, precursory vomits and purges, and, in like manner, an acute diarrhœa; for a chronic one is dried up by venery. And strong desires I do not approve of, but think that they ought to be contended against, especially by those who have any distemper. The most proper season for enjoyment is after gymnastic exercises, baths, and a moderate repast; for food contributes to the strength, and diminishes the chills which succeed it. The proper time, as I said before, is after eating, and before sleep, for the lassitude is relieved by sleep. This too is the fittest time for procreation on many accounts, and because that the woman falling asleep is the more likely to retain the semen.

COMMENTARY. The contents of this Section are mostly taken from a fuller account of this subject, given in an extract from the works of Ruffus, preserved by Oribasius. (Med. Col. vi, 38.) See also Aëtius (iii, 18); Galen (Ars Medica, de Sanit. tuend. iii, 11); Avicenna (Cant.); Averrhoes (Comment. in Cantica, and Collig. vi, 7); Rhases (ad Mansor. iv, 17); Haly Abbas (Pract. i, 10, 13); Alsaharavius (Theor. x.) COMM.

The conclusion at which Galen arrives with regard to venereal exercises is that they have a tendency to render the body drier, colder, and weaker, and that these bad effects are to be counteracted by things of a bracing, heating, and strengthening nature.

Averrhoes says, venery, in a word, induces the following evils: dryness of the body, effeminacy, imbecility, exhaustion, and at the same time prostration; therefore, the friction which is had recourse to after it, ought to remove the inconveniences occasioned by it. This should be much and rough friction, and be performed with oil.

COMM. According to Avicenna, excessive indulgence breaks down the powers of the constitution, and superinduces either a cold intemperament or hectic fever. Abstinence, on the other hand, by those who had been in the habit of indulgence, is said to bring on heaviness of the head and diseases of the joints and testicles. In this case, he recommends rue, and various other articles, which were supposed by the ancients to be possessed of anti-aphrodisiacal properties. Cicuta, according to Pliny, produces this effect.

Alsaharavius forbids coition when the body is either reduced by abstinence or overloaded with too much food and drink. The proper season for it, he says, is after sleep, when digestion is accomplished, and towards morning. It is prejudicial, he says, in very hot seasons, and to persons of a dry intemperament. Rhases, like our author, says that moderate indulgence removes plethora, lightens the mind, and cures sorrow.

According to Haly Abbas, the most proper time for enjoyment is after digestion, and when the food has descended into the stomach. If performed before sleep, he says, there is most chance of impregnation. Abstinence, when one had become habituated to the act, he says, weakens the natural heat, hurts the breast, stomach, and liver, induces coldness of the body, and renders it dry, sluggish, and enervated. Excess, on the other hand, brings on premature old age and consumption.

It will be remarked that our author and Alsaharavius differ in opinion as to the best season for partaking of the δωρ' ἑρατὰ χρυσῆς Ἀφροδίτης.

See a learned disquisition on this and other similar matters in the 'Symposiacon' of Plutarch. Pliny says of it "medetur et lumborum dolori, oculorum hebetationi, mente captis, ac melancholicis." (H. N. xxviii, 16.)

SECT. XXXVI.—ON IMPOTENCE.

In cases of impotence, it may be proper to rub the parts frequently with an ointment containing a small part of the root of the narcissus, or the seed of the thymelæa, or pellitory, or stavesacre, or the seed of the nettle, or of anise. Let them also before their meals take a drink with pepper, or satyrium, or

rocket, or bastard saffron, or all together. Before food, let him also eat the small red bulbi roasted, with salt and oil, or a little of the squill dried in the sun. They may also use the compound preparations elsewhere described, and often indulge in obscene reading.

COMMENTARY. Athenæus mentions that it was a practice with some to put sponges into beds, as incentives to venery. He states, upon the authority of Theophrastus, that certain medicines are possessed of aphrodisiacal properties, to an almost incredible degree. (Deipnos, i, 15.) He says the immoderate use of wine often induces impotence; and relates that it had this effect upon Alexander the Great. (Deipnos, x, 45. Hippocrates mentions that many of the Scythians were affected with impotence, by being constantly on horseback. (De Aer, &c. vi, 22.) See Coray's Note, and Littré's Hippocrates, (t. iv, p. 9.) It would appear that many of the ancient athletæ, rendered themselves impotent by self-denial and immoderate exercise. (Galen. de Loc. affect, vi, versus finem.) COMM.

The ancients held, that most of the testacea are aphrodisiacal. See Plautus (Casina, ac. ii, sc. 8, l. 59,) and the note of Lambinus (Ed. Gronov.); also Petronius Arbiter (Satyricon.)

The rocket (*eruca*) was particularly celebrated as an aphrodisiacal herb. See Pliny (H. N. xix, 8), and Juvenal (Sat. ix, 134.); Columella (in Hort.); Galen (de Fac. Alim. lib. ii.) Ovid calls it *herba salax*. (Remed. Amor. 799.)

On this subject, see Rhases (ad Mansor. v, 62, Contin. xxiv); Avicenna (iii, 20, 1); Alsaharavius (Pract. xxii, 11.) Rhases gives a long list of articles which were supposed to be possessed of aphrodisiacal properties, such as nettle-seed, elecampane, rape-seed, mint, rocket, cresses, cubebs, &c. Avicenna's account, however, is the fullest. He directs the parts to be rubbed with liniments, containing staves-acre, pellitory, squills, myrrh, assafœtida, and the like.

SECT. XXXVII.—ON INORDINATE VENERY.

Since by too much indulgence the body becomes flabby, cold, dried, and weak, it must be supplied with such things as will

brace, warm, humectate, and strengthen it. To those who indulge themselves immoderately, warm clothing is suitable, also rest and sufficient sleep until the body remits from its tension, and they recover from their atony.

COMM. COMMENTARY. This Section is partly taken from Oribasius. (Synops. v, 35.) A similar account is given by Rhases. (Ad Mansor. v, 67.) Inordinate venery, he says, occasions premature old age, dries the body, and brings on frigidity. (Contin. c. xxiv.) See, in like manner, Avicenna (iii, 20, 1, 36.) To restore the body when debilitated by excessive enjoyment, he recommends a calefacient and diluent regimen, nutritious food, baths, aromatics, and everything that can exhilarate.

SECT. XXXVIII.—ON REDUNDANCE OF SEMEN.

Some persons collect much semen of a warm nature, and then proceeding to coition and discharging it, render the body weak, and the stomach languid, and so become emaciated and dried: or, if they abstain from venery, they are seized with heaviness of the head, and become feverish; after which they have libidinous dreams, and the same thing takes place. They must therefore avoid those things which engender semen, and take such kinds of food and medicines as consume it. After the bath they ought to have their loins rubbed with the oil of roses, or that of apples, or of unripe olives; and it is better to make them thick by mixing a little wax with them, and the juice of some cooling herb, such as the house-leek, nightshade, the navelwort, or fleawort. In summer these may be used, but at other seasons, salt and the juice of the lettuce and linseed boiled in water, for it also furnishes a cooling juice. And a plate of lead applied to the loins will prevent libidinous dreams; and herbs of a cooling nature, as rue and the tender tops of the chaste tree, if strewed under one in bed, will have the same effect. For this purpose, also, the seed of the chaste tree and of rue may be eaten. Care, however, must be taken that the loins be not too much cooled, lest the kidneys be hurt.

COMMENTARY. This Section, is taken, with a very few slight alterations, from Galen. (De Sanitate tuendâ, vi, 14.) The same treatment is recommended by Avicenna (iii, 20, 1, 35); and by Rhases (ad Mansor. v, 67.) Alsaharavius recommends bleeding, and various cooling and astringent remedies, both internally and externally. (Pract. xxii, 9.) COMM.

Hippocrates says that the strychnos cures impure dreams. (De Diæta, ii.) Serapion states that the lettuce possesses "virtus contraria spermati." (De Simpl. ex Plantis.)

We may remark here, once for all, that by the *juice* (χυλὸς) of herbs, the Greek medical authors generally mean the decoction. Thus, according to Dr. Coray, by χυλὸς τῶν ἑρεβίνθων, Hippocrates understood ἀφέψημα τ. ε. (Xenocrat. de Alim. ex Aquat. p. 219.) In like manner, by "the juice of ptisan," was meant strained ptisan, as Hippocrates himself has distinctly stated in his treatise on 'Regimen in Acute Diseases.'

SECT. XXXIX.—ON PERSONS INJURED BY COLD.

Those who are much congealed ought to be laid in a warm place, and rubbed with the oil of privet, or of the iris. Afterwards, when moderately heated, they should get pepper, or myrrh, with sweet fragrant old wine, or Cyrenaic juice in wine or vinegar, or pellitory or castor with vinegar, and be given food of a heating nature.

COMMENTARY. This Section is taken from Oribasius. (Synops. v, 36.) COMM.

Rhases directs us to lay a person congealed with cold in a warm apartment, and to rub with hot hands the whole of his body, with the exception of the head, which is to be warmed with hot cloths. Persons having warm bodies are then to lie down in bed beside him; and he is to take a draught containing assafœtida, myrrh, pepper, and strong wine. When the respiration is fairly restored, he is to take some nourishing food and wine; and is then to be covered up with many blankets, and left to sleep. When he awakes, he is to be put into a hot bath, and after remaining for a long time in it, he is to be strongly rubbed when he leaves it with calefacient oil, such

COMM. as the oil of lilies or narcissus, to which costus, castor, musk, and spurge have been added. (Ad Mansor. vi, 5.)

Let the reader remark the similarity of the ancient practice in the cases of persons who have been exposed to great cold, and of those who have been poisoned with opium. (See Book Fifth, 43.) Galen remarks, that the effects of opium, and of the exposure of the body to extreme cold, are very like. (Comment. in Epidem. Hippocrat.)

In the 4th book of Xenophon's 'Anabasis,' there is an interesting description of the effects resulting from the exposure of the Grecian army to extreme cold, and the means which they took to preserve themselves from being injured by it. The historian relates that they rubbed themselves before the fire with an ointment composed of swines' seam, and oils of sesame, of bitter almonds, and of turpentine. The Carthaginian soldiers of Hannibal, in like manner, when exposed to great cold among the mountains of Italy, rubbed their bodies with oil as a protection from its effects, and with great success, if we may believe Florus the historian: he says, "tunc callidissimi hostes frigidum et nivalem nacti diem, quam se ignibus prius, oleoque fovissent, (horribile dictu!) homines a meridie, et sole venientes, nostra nos hieme vicerunt." (Hist. Rom. ii, 6.) It is worthy of remark, by the way, that Baron Larrey, in his account of the retreat of the French army from Moscow, states that the inhabitants of southern climates endured the cold better than those of the north. The fact that the Carthaginian soldiers rubbed their bodies with oil on the occasion we have mentioned is stated also by Polybius (Hist. iii, 72), and by Livy (Hist. Roman, xxi, 55.)

Quintus Curtius relates that the soldiers of Alexander the Great rubbed their bodies with the juice of sesame, instead of oil, when exposed to intense cold while crossing the Bactrian mountains. (vii, 15.)

Pliny, with his usual terseness, thus states the powers of oil in protecting the body both from cold and heat: "Oleo natura tepefacere corpus, et contra algores munire; eidemque fervores capitis refrigerare." (Hist. Nat. xv, 6.)

SECT. XL.—FOR PERSONS SCORCHED BY THE SUN.

Persons who have been scorched by the sun should be laid in an airy place, and have their face, hands, and legs bathed with cold water. If thirsty, they may drink cold water, if in the practice so to do; this, however, ought to be done considerately, and not much at a time. Let them also take some food of easy distribution, rather of a fluid than of a solid nature.

COMMENTARY. This Section is taken from Oribasius. (Synops. v, 37.) COMM.

When a person has suffered from exposure to great heat, Rhases recommends rest, the tepid bath, and fruits and food of a cooling and moistening nature. When there is headach, he directs the head to be anointed with oil of roses and vinegar. (Ad Mansor. vi, i.)

Averrhoes recommends a person who has suffered from exposure to the sun to be put into a tepid bath, and rubbed afterwards with refrigerant oils. (Collect. iii, 9.)

SECT. XLI.—ON COLLECTIONS OF PHLEGM IN THE STOMACH.

If you should meet with a person who loathes any wholesome food which is offered him, who abstains from food, or, if compelled to take it, becomes sick, who longs after only such things as are acrid, and has no pleasure even in them, but has his belly swelled up with flatulence, is seized with nausea, and enjoys only a short respite by eructations, and on whose stomach everything spoils and becomes acid,—know for certain that the remedies which will afford him relief are such as will clear the stomach of phlegm. I have known one of those so affected, after taking an emetic, consisting of radishes out of oxymel, bring up an incredible quantity of very thick phlegm, by which he has been straightway completely restored to health.

COMMENTARY. This chapter is taken from Oribasius, who, in his turn, is indebted to Galen. COMM.

Comm. A similar account is given by Rhases. (Contin. xi, 1.) He recommends emetics. (Ad Mansor. iv, 16.)

SECT. XLII.—HOW TO PRODUCE EASY VOMITING.

Since to those who vomit with difficulty many disagreeable consequences are apt to happen, it will be proper to explain by what methods one may be made to vomit readily; for this operation evacuates phlegm and lightens the head, and prevents a person who may have eaten immoderately from suffering indigestion, and one who has taken too much wine from being hurt thereby. Let the substances which are taken be neither sour nor dry, but part of a sweetish and liquid nature, and part acrid. Among these the radish is deserving of praise, and also the rocket, and old pickle, green marjoram, and a small quantity of onion and leek. Vomiting is likewise promoted by ptisans of pulse containing some honey; by soup of bruised beans and the fat of flesh; but one must not only take the juice, but swallow whole lumps of it; and one must not spend much time upon mastication; but these things ought to be soft from boiling. It is clear, also, that it is the sweetish kinds of wine which ought to be preferred, for such are aptest to swim upon the stomach; and tepid drink ought to be used. It is proper also to eat almonds dipped in honey, also sweet cakes, and the moistened seed of the pompion and cucumber pounded with honey. The root likewise of the cucumber rubbed with honey has some effect. Those who wish to use more powerful medicines, mix some wine with a decoction of the bulb of the narcissus. Vomiting is also produced by the ointment of iris, if one will smear one's fingers in it and tickle one's throat. It is also to be attended to in vomiting not to intermit after vomiting is once begun; and to bathe the face and wash the mouth with sour wine or water, for this is beneficial to the teeth, and relieves the head.

Comm. Commentary. This Section is abridged from Oribasius. (Med. Collect. viii, 21.) The opinions of Galen, Diocles, and Archigenes, on this subject, may likewise be learned from Oribasius. Galen recommends vomiting for collections of yellow

bile, and when the stomach is loaded with viscid matters, but forbids it when the stomach is weak. The opinions of Celsus are very similar: "Vomitus ut in secunda quoque valetudine sæpe necessarius biliosis est, sic etiam in iis morbis quos bilis concitavit. Vomitus utilior est hieme quam æstate; nam tum est pituitæ plus, et capitis gravitas major subest. Inutilis est gracilibus et imbecillum stomachum habentibus: utilis est plenis et biliosis omnibus si vel nimium se replerunt, vel parum concoxerunt." The directions given by Celsus for producing vomiting are very simple: "Qui vomere post cibum volet, si ex facili facit, aquam tantum tepidam antè debet assumere: si difficiliùs, aquæ, vel salis, vel mellis paulum adjicere. At qui mane vomiturus est, antè bibere mulsum, vel hyssopum, aut esse radiculam debet, deinde aquam tepidam (ut supra scriptum est) bibere." Galen commends the bulb of the narcissus as an emetic. He forbids those who have contracted chests to take emetics frequently. (De Purgantibus Medicinis.) COMM.

Aëtius gives an interesting account of this subject in an extract from the works of Ruffus. He forbids vomiting when the eyes are affected, or when hæmoptysis is apprehended. He commends it for the cure of arthritic diseases, dropsy, and jaundice. One of his simplest emetics consists of the decoction of radishes, with the strained infusion of dried figs. He mentions the oil of privet as a most effectual emetic. (iii, 19.)

Avicenna's information on this subject is very ample; but, upon the whole, his directions are mostly the same as our author's. He properly states that the too frequent repetition of emetics hurts the stomach, is prejudicial to the chest, the sight, the teeth, in chronic pains of the head, unless arising from sympathy with the stomach: and in epilepsy, when the cause of it is seated in the head. (i, 4.) According to Avicenna and Averrhoes, the proper season for emetics is the summer. (Cant. I. 1.)

Rhases says that much vomiting hurts the liver, breast, eyes, and lungs, occasioning hæmoptysis. He directs the person to bind a compress on the forehead before taking an emetic; and to wash the mouth and face with hydromel after its operation. He adds that persons who have long necks, prominent chests, and who are lean, ought to abstain altogether from emetics. (Ad Mansor. iv, 16.)

COMM. Haly Abbas forbids emetics in chronic complaints of the head and chest, especially if the person be threatened with phthisis. He says that the repetition of them weakens the stomach, and may induce hæmoptysis. (Pract. i, 12, 13.) Alsaharavius delivers exactly the same detail of the cases in which emetics prove hurtful or beneficial. (Theor. x, 2.)

Serapion gives a full account of these gentle emetics. (De Antidotis, c. 36.)

On the simpler methods which the ancients had recourse to in order to produce vomiting, see Prosper Alpinus. (Med. Meth. iii, 10.)

We would here remark that the predilection of the ancients for vomits has appeared very extraordinary to some of our modern writers on dietetics, the more especially as it was supposed that the ancients made use of violent emetics, as for example, the white hellebore, in such cases. It is certain, however, that the ancients were acquainted with gentler means of unloading the stomach on ordinary occasions, and that they seldom made use of such medicines as the hellebore, except in cases of disease; and, as we shall see afterwards, were well aware of the danger of giving strong emetics unseasonably.

SECT. XLIII.—ON LAXATIVES AND DIURETICS TO THOSE IN HEALTH.

Some of the ancients thought it sufficient for health that the bowels and urine should be evacuated once a day freely and fully, according to the quantity of food and drink which had been taken; and when the evacuations were agreeable to this rule, they were satisfied, or, if otherwise, they assisted them by taking, in order to increase the urinary discharge, shepherd's needle, parsley, asparagus, Macedonian parsley, anise, calamint, marjoram, wormwood, the roots of couch-grass and of golden thistle, tree-medic, and of maiden-hair; all these being boiled in water, so that the decoction might be drunk with wine. For these things purify the blood by the urine, and are of no small efficacy. Alvine discharges are to be assisted by giving turpentine to the quantity of an olive when going to rest, or, when it is wished to purge more effectually, by adding a little rhu-

barb. Soft eggs, of pot-herbs the beet and mallows, and the soup of shell-fish are also laxative, and these probably will be sufficient. But if more powerful remedies be required, the herb mercury, boiled in water with salt, may be eaten, or the decoction drunk; and, in like manner, the leaves of the elder tree (sambucus), or the root of the oak-fern (polypodium) to the amount of two drachms, may be sprinkled upon pickle, or swallowed in a ptisan; or milk-whey, with salt; or honey, to the amount of three or four heminæ; or the broth of an old cock, by itself or with two drachms of bastard saffron, or aloes, to the amount of about three chick-peas, may be taken at supper-time. But the best remedy is dodder of thyme, taken in wine after a moderate supper. But he that wishes to purge more strongly must take, in the morning, a drachm of this medicine infused in vinegar and honey, if in the spring season.

COMMENTARY. Oribasius treats fully of purgatives towards the end of the 8th book of 'Med. Collect.' He gives a list of gentle laxatives. (Euporist. i, 45.) COMM.

Hippocrates frequently recommends gentle purgatives for the preservation of the health. Of this class, the herb mercury appears to have been his favourite.

Galen has given two distinct treatises on purgatives, and the cases in which they are applicable. He dissuades those who are in good health from taking them, but says that they may often be used so as to prevent the recurrence of diseases. Hence, he says, that he had often prevented gout and rheumatism from relapsing, by the seasonable administration of purgatives. He forbids purgatives when the hypochondria are distended with flatulence.

Aëtius gives a very lengthy account of the preparation of purgative medicines, which will be noticed more properly in the Seventh Book. He states that all medicines of a cutting or penetrative nature are diuretic. He mentions plantain, fennel, parsley, seseli, anise, valerian, bitter almonds, &c. (iii.)

Celsus gives the following list of gentle diuretics: "Urinam movent quæcunque in horto nascentia boni odoris sunt, ut apium, ruta, anethum, ocimum, mentha, hyssopum, anisum, coriandrum, nasturtium, eruca, feniculum: præter hæc, asparagus, capparis, nepeta, thymum, satureia, lapsana, pastinaca, magisque agrestis,

COMM. radicula, siser, cepa; ex venatione, maximè lepus; vinum tenue, piper et rotundum et longum, sinapi, absinthium, nuclei pinei." He also gives a long list of laxative articles, such as cabbage, mallows, sorrel, gourds, cherries, all ripe apples, green figs, cockles, oysters, muscles, milk, crude honey, and all fatty and salty substances. (ii, 29.) Horace makes mention of the laxative properties of oysters, cockles, dock, and white wine—

> "Si dura morabitur alvus
> Mitulus et viles pellent obstantia conchæ,
> Et lapathi brevis herba; sed albo non sine Coo."
>
> (Sat. ii, 4.)

Avicenna gives very minute directions respecting the use of purgatives. He very properly recommends us when a purgative medicine has been taken, and instead of operating, has occasioned heat, vertigo, and headach, to administer an injection. (i, 4.)

Haly Abbas treats of these medicines in pretty much the same terms as our author. He remarks that obstruction of the bowels leads to colic, flatulence, difficult respiration, and vertigo. Retention of urine, he says, leads to ulcers in the bladder. He states that diuretics are useful in diseases of the joints and spine, dropsy, and various complaints, but are apt to render the body dry. (Pract. i, 12.) Diuretic medicines, he remarks in another place, are of a hot and sharp nature, so that they heat the kidneys, and thereby increase their attractive power. (ii, 27.)

Alsaharavius cautions against the indiscriminate use of purgatives, which, he says, in a dry temperament disposes to phthisis, and to dropsy when the stomach is weak. When a purgative medicine has induced hypercatharsis, he prescribes astringent powders, containing sumach, pomegranate, and the like. (Theor. x. 1.)

Rhases gives some very sensible observations on the use and abuse of purgatives. He says that persons who lead an indolent life, are of a gross habit, and live freely, are most benefited by them. To those of a dry temperament, on the other hand, they prove prejudicial, by predisposing to hectic fever. He recommends fat food and the warm bath before taking a purgative. (Ad. Mansor. iv, 15.)

See a full account of these laxative medicines, in Serapion (De Antidotis.)

SECT. XLIV.—ON CLYSTERS.

In constipation of the bowels, when the stomach is naturally weak, and cannot bear purgatives, recourse must be had to clysters. When phlegm is contained in the intestines, the clyster may be composed of the decoctions of dried figs, and of beet, nitre, the root of the wild cucumber, honey, and the oil of chamomile or dill. But when the complaint proceeds from dryness they may be composed of those of marsh-mallows, fenugreek, chamomile, oil, and a small quantity of honey. And sometimes oil alone, injected to the amount of half a hemina, will produce the desired effect; but even this must not be repeated constantly, lest nature, becoming accustomed to these things, should forget to perform the evacuation spontaneously.

COMMENTARY. Hippocrates frequently recommends the administration of clysters. Herodotus mentions that the ancient Egyptians had recourse to clysters at stated periods every month. (ii, 77.) COMM.

Oribasius has treated of the composition of clysters, and the cases in which they are to be applied so fully in the eighth book of his 'Medica Collectanea,' that he may be said to have exhausted the subject. It appears, from his account, that the ancients used a syringe for throwing up injections. A large clyster, he says, amounts to three heminæ, a small one to one hemina, and a moderate one to two heminæ (two pints). (Synops. i, 19.)

Celsus, after some very appropriate observations on the cases which are benefited by clysters, concludes with the following directions for the composition of them: Plain water may be injected, if the case be slight; or honied water, if stronger means be required; if emollients be indicated, the decoction of mallows, of fenugreek, or ptisan may be used; or if astringents be proper, vervain. Acrid clysters may be formed of sea-water, or with the addition of some salt, and their strength may be increased by boiling. Such a clyster may be rendered still more acrid by the addition of oil, nitre, or honey. He remarks that the more acrid a clyster is, the greater will be its purgative effect, but the more difficult will it be to bear. He says it

COMM. ought to be neither hot nor cold. After the injection has been thrown up, he recommends the person to remain quiet, and to resist the first desire to go to stool. (ii, 12.)

Aëtius treats of clysters very fully. He prefaces his account of the mode of administering them, with a correct detail of the evils arising from constipation, which, he justly remarks, is the precursor of most of the ills which break out in the human frame. (iii, 159.)

See a long list of prescriptions for clysters in Serapion. (De Antidotis, tr. vii, 26.) Rhases and Avicenna give a full account of the nature of clysters, but supply no additional information on the subject.

SECT. XLV.—ON SUPPOSITORIES.

We often use suppositories for the discharge of scybalæ, or when injections are not properly evacuated. Suppositories are formed of roasted salt, honey, and nitre; or thyme may be mixed with boiled honey. They are also formed of turpentine rosin, and nitre, and sometimes with a moderate quantity of the seeds of the thymelæa (granum cnidium); but it irritates the parts, which, therefore, ought to be rubbed with oil. Pellitory and pepper are also added, and are particularly fitted for paralytics, and for the relief of flatulence from cold. Centaury is also mixed with pitch and cerate, and is very applicable for paralysis of the genital organs. For infants a lump of salt is applied. Figs also are mixed up with nitre.

COMM. COMMENTARY. This Section is entirely taken from Oribasius. (Synops. i, 20.) See a fuller account in his 'Med. Collect.' (viii, 39), and Aëtius (iii, 160.) Aëtius, after mentioning the composition of certain suppositories similar to those of our author, speaks also of using for this purpose, figs mixed with nitre (soda?) and grapes deprived of their stones, with the addition of nitre and cumin.

Actuarius states that it is when the obstruction is seated in the rectum that suppositories are particularly applicable. (Meth. Med. iii, 5.)

See also Avicenna (iii, 20, 1), and Rhases (Contin. xxiv.)

The use of suppositories in the practice of medicine might be traced back to the earliest times. Mention of them occurs frequently in the works of Hippocrates. COMM.

SECT. XLVI.—ON MEDICINES WHICH EVACUATE PHLEGM FROM THE HEAD, MASTICATORIES, ERRHINES AND LINIMENTS TO THE NOSE.

We evacuate humours fixed in the head, with the saliva, by mixing some pepper with mastich, if a small discharge only be required; or, if a greater evacuation be wanted, by giving directions to chew pellitory or stavesacre. The root of every species of anemone, when chewed, also excites the secretion of saliva, and the rind of the root of cappers. Serous superfluities may be thus evacuated; but, for thicker phlegm, we must gargle with mustard in vinegar and honey, or with sodden wine, having marjoram and hyssop boiled in it. I also mix this with the gargle formed of mustard in vinegar and honey. When we want to clear the brain of mucus, we must stimulate it by means of acrid substances, of which kind some are sternutatories. The juice of either pimpernel, of the anemones, and of beet purge by the nose. The juice also of the leaves of the wild cucumber may be applied to the nostrils, either alone or with the decoction or juice of the beet. But sneezing is not at all applicable for crude humours contained in the chest, lungs, and head. The following ointment may be rubbed into the mouth: Anoint the roof of the mouth and uvula with a soap containing the juice of the beet. The same application may be used as an errhine. I have also often used the following composition, which is easily prepared: Macerate gith in strong vinegar for a day, then next day rub it with the vinegar, and pour it into the nose. Sometimes the gith may be rubbed with old oil; and I apply it in this manner. Archigenes used it in the same manner for obstruction of the nostrils. Crito used the former cure, along with vinegar, for jaundice.

COMMENTARY. This Section is taken from Oribasius. (Synops. i, 21.) COMM.

Hippocrates makes frequent mention of the *caput-purgia*, or

COMM. medicines which purge the head. On the composition of these medicines, see in particular Aëtius (iii, 140-1); Nonnus (Epit. 17); and Serapion (de Antidotis, vii, 31.) They contain such articles as these: pepper, nitre, white hellebore, spurge, gith, pellitory, mastich, turpentine, mustard, chalcitis, alum, and the like. The errhines were used principally in obstructions of the nose, and when the sense of smell was impaired. The *apophlegmatismi* were supposed to prove useful in chronic affections of the head, impairment of the senses of smell and sight, and also when the tongue and throat were affected.

Prosper Alpinus gives a full account of the errhines, masticatories, and cough medicines of the ancients. (Med. Meth. iii, 11.) He makes the *caput-purgia* to be the same as the errhines, and the *apophlegmatismi* the same as the masticatories of the moderns.

SECT. XLVII.—ON EMMENAGOGUES.

All diuretics promote also the flow of the menses, such as the decoction of the root of the cabbage, the root of the peach, rue, marigold, dittany, and the seed of rocket. The same effect may be produced by certain substances when applied to the mouth of the womb, as suppositories, such as rue rubbed with honey, or the juice of leeks, or finely-powdered germander, or myrrh, triturated in wine, or the rennet of a hare.

COMM. COMMENTARY. This Section is taken from Oribasius. (Synops. i, 22.) A fuller list of the medicinal articles which were supposed by the ancients to promote the menstrual discharge is given by Aëtius. (iii, 153-4.) It contains cassia, myrrh, thyme, centaury, wormwood, nettle, elaterium, black hellebore, turpentine-rosin, cumin, sage, and the like. All these were used in injections and suppositories. The following were given by the mouth, and were held to be likewise diuretic: hedge-mustard, rue, marjoram, southernwood, sagapene, galbanum, spikenard, the herb mercury, savin, iris, birthwort, &c. See Albengnefit (Libellus.)

Dioscorides is censured by Dr. Cullen as being too credulous in assigning emmenagogue properties to a variety of articles in

the Materia Medica. Perhaps, however, there is some foundation for the doctrine of the ancients, that all hot diuretic medicines are in so far emmenagogue. Prosper Alpinus maintains this opinion, but remarks that the action of the emmenagogues is more uncertain than that of the diuretics, and must be assisted by warm baths, pessaries, and fomentations. We shall have occasion to treat more fully of these medicines in the Third Book. COMM.

SECT. XLVIII.—ON SUDORIFICS.

The following medicines are sudorifics: The dried powder of chamomile, sprinkled upon oil, and rubbed briskly upon the skin, seseli, pellitory, the seed of the rosemary, anise; and in like manner, when sprinkled upon oil; nitre toasted, and not very fine, with oil; the flower of salt mixed with oil; Cyrenaic juice diluted with water, which may be rubbed into the body, and taken in a draught, to the amount of a chick-pea. Calamint, in like manner, when drunk with honied water, and rubbed externally with oil.

COMMENTARY. This Section is mostly copied from Oribasius. (Synops. i, 23.) Aëtius enumerates a good many more medicines of this class. Of these some are to be taken by the mouth, as cumin, bay berries, Cyrenaic juice, castor, and lovage; some are to be rubbed into the skin, as nitre with common oil, the oil of dill, of chamomile, of bays, and of radishes; and some are to be used in fumigations, as pennyroyal, the seed of balsam, and so forth. He recommends these medicines in jaundice, and for coldness and constriction of the skin. (iii, 157.) COMM.

Celsus treats of the methods for producing free perspiration with more than his usual minuteness. Sweating, he says, may be produced either by dry heat or by baths. The modes of applying dry heat, which he mentions, are by heated sand, the laconicum or sweating apartment of the ancient bath (see Sect. LI), the clibanus or moveable furnace, and the vapour-baths of Baiæ. To these he adds strong exercise. He also treats minutely of the application of baths and fomentations for the cure of diseases. (ii, 17.) Consult Stobæus (100.)

COMM. Haly Abbas directs us to restore the perspiration, when stopped, by exercise, friction, baths, and the affusion of hot water over the body. He further recommends friction with the oil of violets, and such things as are mentioned by our author. (Pract. i, 12.)

Rhases recommends internally, castor, opoponax, or opium mixed with honey, and given in tepid water. Externally, he recommends friction, with the oil of chamomile, of pellitory, or the like. (Contin. 31.) Mesue mentions fumigations with calamint, cinquefoil, carpobalsam, and bdellium. Albengnefit recommends the same, and also friction with calefacient oils, and the internal administration of cumin, calamint, and the like.

The ancients, as Prosper Alpinus remarks, seem to have trusted more in external than in internal means for producing free perspiration. They were aware that when the system is greatly over-heated, a draught of cold water, by reducing the temperature of the body, may prove sudorific. This fact is distinctly stated by Galen; and, in accordance with this principle, Rhases prescribes cold water in the hot stage of the smallpox, to facilitate the eruption of the pustules.

On the sudatoria or vapour-baths of the ancients, see Baccius (de Thermis, iv), and Sect. LI, below. Horace thus alludes to the vapour-baths at Baiæ:

> "Sane myrteta relinqui,
> Dictaque cessantem nervis elidere morbum
> Sulphura contemni vicus gemit."
>
> (Epist. i, 15.)

Upon which Sanadon remarks: "By *sulphura*, the poet means the stoves, where sulphureous vapours exhaling from the earth cause a dry heat, which provokes sweat."

Among the artificial means used by the ancients for procuring perspiration, we may here mention the sand-bath, as it was called, which consisted in rolling the body in sand heated by the sun. (Cælius Aurel. Tard. Pass. iii, 4; Avicenna, i, 2, 2, 20.)

Strong friction in the sun was also used as a means for producing perspiration. See, in particular, Avicenna (i, 2, 2, 20.)

SECT. XLIX.—ON AIRS.

The best kind of air is that which is perfectly pure, such as that which is not defiled with the exhalation from lakes or marshes, nor from any pit which emits pestilential vapours. That also which is impregnated with the exhalations from a canal conveying the impurities of a city is deleterious, and indeed every kind which is loaded with vapours is not good; as also that which is contained within any hollow place, shut up on all sides by high mountains, and not admitting of ventilation. Those, therefore, which are thus deleterious, prove hurtful to all ages and temperaments, whereas the best kinds agree with all. But their differences as to quality—I mean heat, coldness, dryness, and humidity—have not the same effect upon all. Those of a proper temperament are benefited by temperate air, whereas those labouring under an intemperament derive benefit from the opposite kind.

COMMENTARY. The first part of this Section is taken from Oribasius. (Synops. i, 24.) The remaining part will be found in the 'Med. Collect.' (ix, 1), where the subject is treated of at great length. See, also, Aëtius (iii, 162.) All these authors, however, are much indebted to Galen. (De Sanitate tuendâ, i.) According to Galen, the moon produces changes in the atmosphere, whereby she occasions putrefaction of dead bodies, impairs the colour, and hurts the head of living persons. (De Diebus Criticis, iii.) On the supposed causes why the moon occasions putrefaction, see Plutarch (Synops. iii.) COMM.

Antyllus says that there are many differences of airs: some arising from the season of the year; some from the changes of the moon; and some from the hour of the day or night; some from thickness or tenuity, motion or rest, or from the admixture of terrene exhalations. The sun, he adds, warms the body; but the moon rather humectates, and, therefore, she moistens the brain, and occasions the putrefaction of the flesh; renders the bodies of those who sleep in the open air more humid and obtuse; and, for the same cause, she induces epilepsy and heaviness of the head. Cold air, he says, produces plumpness, good nutrition, and the formation of fat; it promotes the growth of

COMM. the body, and hence, the inhabitants of northern climates are remarked to possess this character. It is unsuitable, however, to all acute disorders; and is also improper for certain chronic diseases, such as consumption, cachexy, paralysis, apoplexy, and rheumatism. Warm air consumes the body, attenuating and wasting the system, but it is preferable to cold air for imparting vigour and agility; it tries the powers, is useful in affections of the nerves and chest, but not in those of other parts. Thick air has no other good property, except that it prevents the powers from being dissipated. Thin air is most conducive to health. The air of high situations is said by him to be more salubrious to all persons, except those labouring under diaphoresis or syncope, and the aged. The atmosphere of places near the sea, he remarks, is milder than that of inland parts. Places in the neighbourhood of marshes are at all times unhealthy; but, in summer, their atmosphere is pestilent. Those by a river side are cold and changeable. See more fully Stobæus. (Sermo xcix.)

Hippocrates gives many interesting observations on the effect of climate, and the state of the atmosphere, in influencing the health; but they are delivered so much in detail, that my limits do not admit of my entering into an exposition of them. (De Aëre Aquis, Locis.) The account there given of the effects of stagnant water when used as drink is particularly deserving of attention. He says it produces diseases of the spleen, dropsies, and the like. See Coray's edition of this treatise.

Haly Abbas gives a very elaborate disquisition on this subject. He describes minutely the characters of salubrious airs, and the changes produced upon them by the seasons of the year, the state of the winds, the nature of countries, and the stars, that is to say, the sun and dog-star. (Theor. v.) See also Rhases (Contin. xxxiii); Avicenna (i, 2, 2.)

SECT. L.—ON WATERS.

It is necessary also to be skilled in the good and bad properties of waters, for of all things water is of most use in every mode of regimen. It is necessary to know that the best water is wholly devoid of quality, as regards taste and smell, is most pleasant to drink and pure to the sight; and when it passes

through the præcordia quickly one cannot find a better drink. But such as remains long there, and proves pungent to the stomach, which it swells up with wind and loads, is to be reckoned pernicious. Such waters are neither soon heated nor cooled, and those things which are boiled in them are slowly and improperly boiled. It is better therefore to prove such water by trial, which he who wishes may do by attending to the following characters: Those which run to the north, and from the sun, pass slowly through the stomach, and are indigestible; they are slowly heated and cooled. Those which are strained through any passage or soil to the east are soon cooled and soon heated, and are to be supposed to be very good. Those also are good which are colder in summer and warmer in winter. Some judge of waters by weight, counting that the best which is lightest. This, if joined to the circumstances already mentioned, may be deserving of consideration, but is not of itself a sufficient criterion of goodness. Rain water, as Hippocrates remarks, is the lightest, the sweetest, the most limpid, and the thinnest, because that which is lightest and thinnest is attracted by the sun, who draws such particles to him, not only from all other waters, but also from the sea, and from bodies. Hence also it is the most prone to putrefaction, as being composed of many different qualities. Let no one suppose that the water which is most prone to putrefaction is the worst, for susceptibility of change is rather a good than a bad property; so that if it has the other characteristics of the best water, and is prone to putrefaction, it is to be reckoned the finest possible. When beginning to turn it proves the cause of hoarseness, coughs, and roughness of speech, to those who drink it. Of rain waters that which falls in summer and during thunder is preferable to that which falls in stormy weather. That from ice and snow is the worst, for during congelation the finest particles of the water are squeezed out. But waters which contain impurities, have a fetid smell, or any bad quality, may be so improved by boiling as to be fit to be drunk; or, by mixing them with wine, adding the astringent to that which is sweeter, and the others to the more austere. Some kinds of water it may be expedient to strain, such as the marshy, saltish, and bituminous. Those which are very cold are to be drunk after food, and not in great quantity. Some also have

discovered certain articles of food and drink for correcting the bad properties of waters. Thus some beforehand drink of the decoction of chick-peas, or eat them; others, wild carrots boiled with some small fish, and fennel in like manner; whilst others again eat beet and gourds beforehand with salts and diluted wine.

COMM. COMMENTARY. Our author has given an outline of Hippocrates' opinions on this subject, and for fuller information, we must refer to his work quoted in the preceding Section.

The characters of the different kinds of water, are thus given by Celsus with his usual terseness: "Aqua levissima pluvialis est: deinde fontana; tum ex flumine, tum ex puteo; post hæc ex nive, aut glacie; gravior his ex lacu; gravissima ex palude." (ii, 18.) Their characters are somewhat differently given by Athenæus. Thus, he states, that water from snow or ice is lighter and better than rain water; otherwise his remarks on the qualities of waters are very interesting. He recommends a moderate draught of water at the commencement of a feast, in order that the veins, being in so far filled by it, may not greedily absorb the chyle before it is properly concocted. (Deipnos, ii, and Pliny, Hist. Nat. xxxi, 21.)

Our author's account is abridged from Galen and Oribasius (Collect. Med. x), or rather is copied entire from 'Euporist.' (i, 14.) Aëtius gives a fuller account extracted from Ruffus (iii, 165.)

Haly Abbas treats of this subject at great length. His characters of the different kinds of water agree very well with those given by our author. He states that rain water is the purest, and snow water the most impure. Haly Abbas condemns the indulgence in a copious draught after a meal. The reasons he assigns for its proving injurious are, that it prevents the surface of the stomach from coming into proper contact with the food, and also that it reduces the natural temperature of the stomach. He recommends a person, if thirst be urgent, to allay it by drinking a small quantity slowly. (Theor. v, 29.)

Alsaharavius advocates similar views. He also forbids drink during the night, as the sensation of thirst may be fallacious; and at all events, he says, it is only increased by indulgence. (Theor. xiii, 1, and xii, 2.)

Rhases, in like manner, states that a draught of water immediately after eating impairs digestion, but is proper after digestion has taken place. (Contin. xxxiii.) Rhases, in another place, states that ice is prejudicial to the health, especially of old persons, by congealing the stomach and hurting the nerves. He admits, however, of the use of water cooled in snow, but recommends its effects to be counteracted by a moderate allowance of wine. Water which has been drawn from a very deep well he directs to boil before using it. (xxxvii, i, 70.) COMM.

In an anonymous treatise on diet lately published by Ideler, the drinking of cold water immediately after a meal is strongly condemned, as being hurtful to the digestion. (Phys. et Med. Græc. Minor. vol. ii, p. 197.)

The following are the principal beverages of the Greeks and Romans: Wine diluted with water; Mulsum, or a composition of honey and wine, resembling the modern clary; Hydromel, or honied water; Zythi, or various kinds of ales; the Spathites, a wine prepared from palms, mentioned by our author (iii, 39); the Sicera, or cider, prepared from apples; Perry, prepared from pears; Posca or oxycrate, a mixture of vinegar and water; the Cyceon, a mixture of wine, honey, flour, and water, according to Hesychius; the Dodra of the Romans, very like the cyceon; Ptisan, prepared from polenta; Barley-water, mentioned by Hippocrates (de Morb. Acut.) and well described by the Arabians; the Lora, a small table-wine prepared from the husks of grapes.

SECT. LI.—ON BATHS.

I think well of the cold bath, and yet I do not say that it is proper for those who use no restriction as to diet, but only to those who live correctly, and take exercise and food seasonably. It may answer with most people very well, when they want to get much cooled, to swim in water during the season of summer, provided they are young and brawny, and have been previously heated by friction. They ought to attend, however, that they be not in a state of lassitude from venery, or any other cause, nor suffering from indigestion, nor after vomiting nor after evacuation of the bowels, nor when in want of sleep. It may be attended with danger, if used at random. But the

warm bath is the safest and best, relieving lassitude, dispelling plethora, warming, soothing, softening, removing flatulence wherever it fixes, producing sleep and inducing plumpness. It is expedient for all, man and woman, young and old, rich and poor.

COMM. COMMENTARY. We think ourselves called upon in the first place to give some account of the Thermæ, or Public Baths, of the ancients, as an acquaintance with their construction and many matters relating to them is indispensably necessary in order to understand the subject now in hand. We need scarcely mention that the Romans surpassed any nation that has ever existed in the magnificence of their public baths. An ancient Therma consisted of four distinct apartments for as many different purposes: 1, Tepidaria; 2, Laconicum; 3, Calidaria; 4, Frigidaria. The 1st, or Tepidaria, called also Apodyterium, derived its former name from its being filled with tepid air, and the latter from its being the place in which the bathers undressed. The 2d, or Laconicum, called also Sudatorium, was an apartment filled either with heated air or steam, that is to say, it was, according to different usages, an air-bath or a vapour-bath. The 3d, or Calidaria, was a cistern for containing warm water. The 4th, or Frigidaria, was a cistern for cold water. The mode in which the ancients went through the process of bathing was as follows. First they went into the Tepidaria, where they left their clothes, and proceeded to the Laconicum, and there they were carefully scrubbed with the flour of beans, soda, &c., and then went into the hot bath, where they remained for some time, and coming out of it, they took a plunge into the cold-water bath, and then returned to the Tepidaria, where they underwent the Restorative friction, that is to say, were rubbed with oils or ointments, and sprinkled with fragrant powders, and then they resumed their clothes. That the order in which the ancients took the different baths was that which we have described may be inferred from the construction of those now remaining, from a passage in Galen's works (t. iv, p. 146, ed. Basil), and from Stephanus (Comment. p. 259, t. i, ed. Dietz.) See also Auctores de Balniis pluries, Baccius de Thermis pluries, and Robertellus Lacon. explic. Pisanæ urbis. In the public baths the ancients always

made use of common water. The ordinary hour for the bath was about two o'clock in the afternoon, but no one was restricted to any hour from the dawn to sunset. Galen approves of taking the bath in the morning, provided one had supped sparingly. (De Sanit. tuendâ, vi.) All agreed in condemning the use of the bath after a full meal. (Persius, Sat. iii; Juvenal, Sat. i, 143; Horat. Epist. vi, 61; Avicenna, Libel, &c). The ancients had also various other modes of practising the bath in private, some of which we shall briefly notice. The Clibanus, mentioned by Celsus (ii, 17), was probably a portable stove. The Pensiles Balneæ were small baths suspended by ropes from the ceiling of the house, in which luxurious persons were rocked. (Pliny, xxvi, 3.) Hip-baths, either of plain water, or water medicated with herbs, or of oil and water, are repeatedly mentioned by all the medical authors, and are particularly described by Aëtius and Avicenna. The *douche* or dashing with water is recommended by Aëtius, in ardent fever, ophthalmy, &c.; but he directs that it should not be carried far. Sprinkling with plain water, or the decoctions of emollient herbs, is recommended when the patients are so weak that they cannot bear the bath. Comm.

Hippocrates thus explains his views as to the effects produced by baths: The bath of sweet waters humectates and cools, for it imparts moisture to the body. The salt bath is calefacient and desiccative; for, being naturally hot, it attracts moisture from the body. When the body is fasting the hot bath is attenuant and refrigerant; for by its heat it attracts the moisture from the body, and when the flesh is deprived of moisture the body is cooled. But after a meal it heats and humectates, by expanding to a greater bulk whatever predominates in the body. The cold baths produce the contrary effects; for when the body is fasting they impart heat and moisture to it, and after a meal they abstract moisture, and being cold they fill it with dryness. Unction with oil is calefacient, moistening and emollient. (De Diæta, ii, 36.) In another place he states that the warm bath, in moderation, softens and enlarges the body; but when taken immoderately it humectates dry bodies, and dries humid bodies. (De Affectionibus, c. 47.)

Celsus gives some ingenious reflections on the effects of the

COMM. bath, especially in fever. He thus states the purposes for which it is applied: "Fere adhibetur, ubi summam cutem relaxari, evocarique corruptum humorem, et habitum corporis mutari expedit." He recommends friction with oil before going into the bath. (ii, 17.)

Our author copies from Oribasius (Euporist. i, 16.) See a fuller account in Med. Collect. (x, 6); Galen (de Sanitate tuendâ); Aëtius (iii, 169); and Avicenna (i, 3, 2.) Galen particularly recommends the cold bath to persons in the prime of life, and during the summer season. Before going into the bath they are to get well rubbed first with rough towels and then with oil. He recommends them to plunge into the water at once, and not descend gradually. After coming out of the water he directs them to get rubbed with oil, until the skin is warmed. Agathinus forbids infants to be bathed in cold water, but recommends the warm bath for them. (Oribasius, Med. Collect. x, 7.)

Galen and Aëtius direct the bath of oil to be formed by adding the fifth part of heated oil to a bath of water. They recommend it in protracted fevers attended with chills, convulsions, retention of urine, and to relieve lassitude, and nervous pains. The learned Bernard remarks that it must have been the expense with which it is attended that has led to the disuse of the bath of oil. (Ad Nonni Epitom.) Avicenna and his expositor, Gentilis Fulginas, particularly recommend it for retention of urine. Mengus Faventinas pronounces it to be highly anodyne. (Auctores de Balneis.)

Psellus says that the warm bath relaxes, softens, and induces sleep, occasioning plumpness of the body. (Opus Medicum.)

Actuarius forbids the use of the bath to those whose systems are loaded with superfluities and bad humours. (De Diæta, xi.) Averrhoes lays down the same prohibition. (Coll. ii, 4.)

The proper time for the bath, according to Haly Abbas, is after exercise, and before eating. If used before exercise, it proves injurious, by occasioning the distribution of any superfluities which may be remaining indigested in the body, and determining them to improper parts. If used immediately after a meal, he says, it proves hurtful, by promoting the absorption of unconcocted chyle, and sending humours to the head. But if used after exercise, and before a meal, it moistens the body, strengthens

the vital heat, promotes digestion, opens the pores, mitigates pain, and dispels flatulence. He adds, a short continuance in the bath, warms and moistens the body, but a long warms and dries it. (Theor. v, 13.) In another place he says that the proper time for the bath is after exercise, yet not immediately, nor until the powers of the system are in some degree recruited; but the body is to be first rubbed with oil, and then the bath is to be taken. (Pract. i, 5.) COMM.

The uses of the bath, according to Alsaharavius, are, to moisten the body, open the pores, dispel flatulence, remove repletion, procure sleep, relieve pains, fluxes of the bowels and lassitude, to restore lean bodies to plumpness and obesity, if used after a full diet, to soften contracted limbs, moisten dry bodies, and dry humid. The evil effects of it when misapplied, are prostration of the vital powers, syncope, and determining the humours to weak parts. (Theor. xi, 1.)

Asclepiades, of Bithynia, was a distinguished advocate for the use of the bath. See Pliny (H. N. xxxvi, 3); Celsus (ii, 6); Apuleius (Florid. 4.)

SECT. LII.—ON THE NATURAL BATHS.

Of Natural baths, some are nitrous, some saline, some aluminous, some sulphureous, some bituminous, some copperish, some ferruginous, and some compounded of these. Of all the Natural waters the power is, upon the whole, desiccant and calefacient; and they are peculiarly fitted for those of a humid and cold habit. The nitrous and saltish are beneficial to the head, to defluxions of the chest, to a watery stomach, to dropsies, to swellings after diseases, and to collections of phlegm. The aluminous are fitted for spitting of blood, vomiting from the stomach, immoderate menstrual discharges of women, and repeated miscarriages. The sulphureous are soothing and warming to the nerves, and relieve lassitude, but weaken and upset the stomach. The bituminous occasion fulness of the head, and hurt the senses, but occasion a steady degree of heat, and soothe when persevered in. The copperish are peculiarly adapted for the mouth, tonsils, uvula, and eyes. The ferruginous are useful to the stomach and spleen. The

descent into the water ought to be without precipitation, in order that its impression may sink deep into the body when in a relaxed state.

COMM. COMMENTARY. This Section is taken from Oribasius. (Synops. i, 29.) A fuller account is given in the Med. Collect. (x, 3 et seq.) See further, Aëtius (iii, 167); Haly Abbas (Theor. v, 13); Rhases (Contin. xxxvii); Avicenna (ii, 2, 15.)

Hippocrates briefly mentions thermal springs of iron, copper, silver, gold, sulphur, alum, bitumen, and nitre. He speaks unfavorably of all such waters, as being hard and heating. (De Aër, &c. 35.) The ancient nitre or natron, it is now well known, was a native carbonate of soda. The alum, mentioned by Hippocrates and the other writers on the thermal springs, cannot have been the alum of modern commerce, since it is very rarely to be detected in mineral waters, but it must have been the alumen plumosum, or hair alum, which Klaproth found to consist principally of the sulphate of magnesia and iron.

By far the most interesting account which has been transmitted to us of the thermal springs of the ancients is that given by Pliny in the 31st book of his 'Natural History.' He more especially commends the medicinal waters near Baiæ, consisting of all the kinds mentioned by Hippocrates and our author, namely, sulphureous, bituminous, saline, &c. Some of them, he says, prove medicinal by their vapour. He speaks of their good effects in diseases of the nerves and joints, and mentions generally of them that they open the bowels. Pliny's account of the virtues of medicinal springs in different parts of the world is curious, but mixed up and disfigured with his usual traits of credulity and love of the marvellous.

The tepid springs of Albula, in the vicinity of Rome, are briefly mentioned by Pliny (l. c.); Vitruvius (viii, 3); and Pausanias (Messeniaco.) Among the natural springs of the Romans the Fons Aponus, or Bagni d'Abano, near Padua, is particularly celebrated. Claudian's poem in praise of its medicinal waters is well known. He calls it

> "Publica morborum requies, commune medentûm
> Auxilium, præsens numen."

Joannes de Dondis has given an elaborate disquisition on the

hot springs of Padua, but it is not by any means so satisfactory as could be desired. COMM.

This would be the proper place to give some account of the ancient Temples of Health, most of which, there is reason to believe, were connected with medicinal springs. But our information respecting them is so scanty, that we can scarcely venture to touch upon the subject at all. We would refer, however, to what Pausanias says of the warm saline springs in the neighbourhood of the Asclepieion at Cenchreæ in Corinthiaca (ii, 2, 4), and of the springs near the temple of Æsculapius at Corone (iv, 34); and of the wells near the temple of Æsculapius at Pergamos (viii. 25.)

SECT. LIII.—ON THE REGIMEN FITTING TO THE DIFFERENT SEASONS.

It is proper to regulate the diet with a view to the season. In winter to take more fatigue, and eat more than usual, if the state of the weather be northerly; but if it be southerly, to take the same fatigue, but to use less food and drink. In fine, to make the body dry in the wet season, and warmer in the cold, to eat also warm fleshes and acrid pot-herbs, and drink more wine than usual. In the beginning of spring some may evacuate by emetics, and others by laxatives, and another may get a vein opened, according as habit or inclination directs. Rest is suitable to the season of summer, and also a diminution of labour and food; the food also ought to be more cooling and the drink abundant; and, in short, everything ought to be done which can contribute to cooling and dilution. In autumn, as it is a changeable, unsettled, and unhealthy season, the diet ought to be particularly attended to, that it be not too refrigerant; moderation as to venery and cold drink ought to be observed; and the cold breezes of morning and the heat of noon attentively guarded against. Too much fruit ought likewise not to be taken, being hurtful not only by the quantity, but also by the quality of the chyle which it supplies, and by engendering flatulence. Nay, even the best kinds of autumnal fruits, figs and grapes, engender flatulence, unless taken before any other food, for otherwise they spoil the other food; but if taken

then, they neither are flatulent, nor spoil the other articles of food. When the air is cold the body must be warmed accordingly, and everything done, as in the commencement of winter. It may also be expedient, after the autumnal solstice, to have recourse to one of the afore-mentioned evacuations, lest any excrementitious particles being shut up in the system should prove hurtful during the winter.

COMM. COMMENTARY. This is copied from Oribasius. (Euporist. i, 10.) It is one of the aphorisms of Hippocrates that those who require bloodletting or medicine, should be bled or take medicine in the spring. (Aphor. sect. vi.) Galen, Rhases, Haly Abbas, and in short all the ancient authorities agree with him respecting this rule of practice. According to Alsaharavius, the pulse is stronger and fuller in spring than at any other season. (Theor. vii, 2.)

Hippocrates and Galen lay it down as a general rule that the fullest diet is most proper in winter, and the sparest in summer. (Aphor. i, 18.)

Rhases lays down very suitable directions for the regimen that is most proper during every season of the year, but they are scarcely at all different from our author's. As we have mentioned, he recommends depletion in spring before the heat set in. In summer, he approves of cooling acid fruits with cold water for drink. In autumn he directs abstaining from cold baths, and the use of a restricted regimen. In winter, he recommends a full proportion of calefacients, such as pepper, cumin, mustard, and rocket. (Ad Mansor. iv, 26.) Winter, he says in another work, favours the formation of flesh and blood, braces the body, and strengthens the powers. Spring fills the system with humours. Summer dissolves the humours, and weakens the internal powers. Autumn engenders bad humours, bile, and blood. (Contin. xxxiv.)

Haly Abbas recommends purging or bleeding in spring, to evacuate the superfluities formed and shut up in the system during winter. In summer, the regimen is to be cooling and diluent; little exercise is to be taken; the cold bath is to be used, swimming in cold water is to be practised: for food, chickens, fish caught among rocks, grapes, apples, and the summer fruits will be proper; but wine is either not to be

drunk at all, or much diluted with water and cooled in snow; and venery is to be avoided. In autumn, the regimen is to be cooling and desiccative, the exercise moderate, the cold bath is to be avoided, but the tepid is to be taken, and much fruit is to be avoided. In winter, the regimen is to be heating and desiccative, and wine is to be taken moderately. The wine, he adds, ought to be strong and heating, to counteract the cold of winter; but much must not be taken, because it will dilute and humectate the body which stands in need of desiccation. Wine, too, he says, possesses little nourishment, whereas the system requires much support in winter. He recommends the flesh of quadrupeds and fowls for food. (Pract. i.) See, in like manner, Avicenna (i, 3, 5); Alsaharavius (Theor. ix, 2.) COMM.

The poet Hesiod recommends a full diet in winter. (Opera et Dies, l. 558.)

Maximus Planudes, in a Declamation on winter, affirms that at this season the heat, being confined within the body, operates more strongly in performing the vital functions than at any other season. This season, he says, is favorable to all classes of men except doctors; but they are sick at heart to see that no other persons are sick, and, bewailing their own misery, undergo the thirst of Tantalus amidst the rains of winter! See Boissonade (Anecd. Græca, vol. ii.)

Among the works of the 'Physici et Medici Græci Minores,' published a few years ago by Ideler, there are several small treatises, one by Hierophilus Sophistes, in prose, one by Theodorus Prodromus in iambic verse, and two others, anonymous, in which the regimen adapted to every month of the year is carefully laid down, but the rules are too minute to admit of being given here. We may mention, however, that they generally recommend pork, with peppers, and pure wine, as the best course of diet in winter.

SECT. LIV.—OF THE REGIMEN OF PERSONS ACTIVELY EMPLOYED.

He who spends his time in business ought to consider whether, in the former period of life, he had been in the habit of taking exercise, or whether, though not taking exercise, he bears

that habit well, and escapes from diseases by having free perspiration. Such a state of body is not to be suddenly changed to another habit, neither the mode of those who have long been in ill health. But if constantly ill and plethoric, the indication of cure ought to be by a healthful regimen, to supply moderate nourishment; or, if cacochymy was the cause, the indication will be to supply proper juices. Those who suffer from fulness are to be directed when they go into the bath to use friction, and to take some exercise, or, if they have already done so, to increase it a little, but to detract from their food, and use less nutritious kinds than formerly; but if from collections of bad humours, one indication of cure is not sufficient, because there is more than one kind of bad humours; for some have a collection of cold and pituitous, some of hot and bilious, and others of the melancholic. Every one, therefore, ought to avoid those articles of food and drink which are apt to engender that sort of humour which is collected. And in all these cases the common remedy is purging of the belly.

COMM. COMMENTARY. This is taken from Oribasius (Synops. v, 29), who extracts it from the 'Commentaries' of Galen. See also Rhases (Cont. xxxiii.) Galen and Rhases remark that persons who lead an active life, such as ploughmen and labourers, digest gross food more readily than any others; but that, their bodies being wasted by excessive fatigue, the vessels take up the chyle before it is properly concocted, and carry it over the system. Hence, such persons seldom attain to an old age, as their bodies get loaded with improper juices.

SECT. LV.—ON THE REGIMEN OF TRAVELLERS.

In performing a journey, one will bear the fatigue best if anointed with oil, and by not making too violent efforts; and by having the body about the loins and to the hollow of the ribs, bound round, in summer, with a swath of a soft consistence, six or seven fingers broad, and in length not less than five cubits. A staff also is useful in a journey; for in going down a declivity it serves as a pole to support the body from

falling forwards, and by leaning upon it in ascending acclivities it will greatly assist in raising the body. When a traveller stops on a journey he should get his body anointed, take some food adapted for the summer, and a moderate quantity of drink. After dinner he ought to rest awhile before proceeding. But if compelled to go on, and oppressed with thirst, water, having some polenta sprinkled upon it, with a moderate quantity of salt, will be of service to him. He should be careful of heat and of the sun, and have his body covered so as not to be exposed to the sun, lest, during the journey, his limbs become dry and stiff. With these precautions, he will be less liable to lassitude, and all its accompanying evils. In winter, when it is cold, before setting out he ought to evacuate, get his body rubbed with oil, and take plenty of the winter articles of food, and a little drink. He should also get not only his loins, but likewise his spine and chest, properly bound with a longer swath. When he stops, as sufficient coolness will be produced by the relaxation, it will be better that he neither anoint, nor take food or drink, nor any other refreshment, if he mean to remain there. But after long journeys, or excessive fatigue of any kind, even if a person do not complain of lassitude, it will be proper to treat him like those who do, for thereby there will be less danger of any bad consequences.

COMMENTARY. This Section is taken from Oribasius (Synops. v, 31), who admits that he borrows, in his turn, from Diocles. The directions are, upon the whole, very judicious and proper. COMM.

Galen forbids travellers who have been exposed to great cold to take heating things immediately after a journey. (Meth. Med.)

Avicenna, Averrhoes, and Haly Abbas direct a traveller to get bled before entering upon a journey; and, in certain cases, this might be a very proper practice to prevent the blood from being inflamed by violent exercise, but, on the other hand, unless judiciously applied, it might bring on such debility as would render the traveller unable to undergo the necessary fatigue. They recommend him to hold in his mouth a small ball of the trochisk of camphor. The Arabians, it is to be recollected, maintained that the action of camphor is frigorific. Instead of the draught mentioned by our author, Avicenna recommends

COMM. vinegar and water. He recommends little food, but of good nourishment; and forbids pot-herbs and fruit. With regard to the treatment of the feet, they are to be rubbed until they become warm, and then anointed with hot fragrant oils. When the feet have suffered from cold, some, he says, put them into cold water, and are thereby relieved, in like manner as congealed fruits are sometimes restored. When the water for drink is bad, he advises to get it distilled.

Haly Abbas gives very minute directions for the conduct of travellers. Like our author, he advises them to gird the body with a swath or band, and to use a staff. He forbids them to begin a journey either fasting, or in a state of repletion with food. Exposure to the sun, he says, is apt to occasion hectic fevers, headach, consumption, and dryness of the body. He directs them to have the head covered. When hurt by exposure to heat, he advises cold water, or any other thing of a cooling nature to be poured over the head. After exposure to cold, he recommends the hot bath. (Pract. i, 31.)

Rhases remarks that he had known all persons who had been exposed to great heat during a journey suffer from attacks of fever, except those of a humid and phlegmatic temperament. He forbids much food before setting out on a journey, and even approves of getting bled and purged, if the undertaking be severe. He recommends, if convenient, a bath at the close of the day; then the traveller is to eat and go to sleep. He and all the authorities quoted by him direct the body to be rubbed with oil before and after a journey. To preserve the eyes from the effects of snow and dust, he recommends them to be exposed to the vapours produced by pouring wine on a heated stone, or to those of chamomile, dill, or marjoram. To protect the feet, he directs them to be wrapped in cloths smeared with calefacient oils. When very hot, he cautions against swallowing much cold water at once, but recommends some cool liquid to be held in the mouth, and cold water to be poured on the hands and feet. He recommends travellers to chew pickled onions. During the prevalence of extreme cold he approves of drinking some hot wine before setting out on a journey. When the journey is over, he directs the traveller to go into a comfortable apartment, but not to approach the fire, nor enter the bath, nor allow himself to sleep during the space of an hour. After this he may go into

the bath, and undergo friction until his body become ruddy, and then he may go to sleep on a soft bed; by which regimen he may be preserved from fever, if such be the will of God. (Cont. xxxiv, Ad Mansor. vi, 3 and 4.) COMM.

SECT. LVI.—OF THE REGIMEN OF PERSONS ON BOARD SHIP.

With regard to the vomitings which occur to people at sea, it is neither easy nor expedient to contend with those which happen first; for, upon the whole, they are generally beneficial. After vomiting, one ought not to partake of much nor of ordinary food, but either lentils, dried and boiled with a small quantity of pennyroyal, or bread pounded in a weak and fragrant wine. One ought also to use but little drink, and that containing a weak watery wine, or vinegar with honey. The lentils ought to be first boiled, and then when they become soft, to be triturated, and afterwards dried and put into an earthen vessel. When severe vomiting lasts for a long time, one should resolutely abstain from all kinds of food, and take only a little drink, which ought to be vinegar and honey with water, containing thyme infused in it, or pennyroyal water with some fine polenta, or some fragrant weak wine with fine polenta also. In order to overcome the disagreeable stench on board ships, one may smell to quinces, thyme, or pennyroyal. One ought also to look as seldom as possible upon the sea, until one has been accustomed to live in a ship. One must likewise attend, that the water which is drunk be not muddy, ill-smelled, or saltish.

COMMENTARY. This Section likewise is taken from Oribasius (Synop. v, 33), who copies from Diocles. Similar directions are given by Rhases, Avicenna, and Haly Abbas. Haly remarks that persons on board of a ship are often infested with lice, which are engendered by want of cleanliness. For them he recommends mercury killed, with oil, the long bithwort, &c. (Pract. i, 31.) Avicenna says that, by wearing wool smeared with oil and mercury, the lice will be killed. (Cant. p. ii.) COMM.

When the vomiting is unusually severe and protracted, Rhases recommends it to be treated with anti-bilious remedies. (Ad Mansor. vi, 14, Contin. 34.)

SECT. LVII.—ON THE MEANS OF DIMINISHING OBESITY.

When the body gets to an immoderate degree of obesity, it will be necessary to melt it down and reduce it. It was mentioned formerly that the warm temperament renders the body lean, and therefore it ought to be superinduced, if possible, upon that of fat people, in order to reduce them to the proper state. You have also learned that active exercise, an attenuant regimen, medicines of the same class, and mental anxiety, bring on the dry temperament, and thereby render the body lean. What an attenuant diet consists of is perfectly obvious; but the more powerful medicines, such as the seed of rue, particularly the wild, with its tops, the round birthwort (*aristolochia rotunda*), the small centaury, gentian, poley, and the stronger diuretic medicines, as Macedonian parsley: all such medicines, either alone, or together, attenuate the humours, and evacuate the body. The salts also from burned vipers and the theriac attenuate the body. The body may also be reduced and attenuated, by having an oil rubbed into it, containing the root of the wild cucumber, marshmallows, gentian, and the root of the all-heal and birthwort, or the poley and centaury. One ought not to take food immediately after the bath, but should first sleep for a little time. And it will be better if the water of the bath possess diaphoretic properties, and, more particularly, if we can have recourse to a natural one, such as that in Mitylene. If it cannot be procured, the flower of salt may be mixed with sea water. Thin white wines ought to be used. Dry rubbing with thick towels is calculated to reduce the fat. A smaller quantity of food ought to be given in proportion to the exercise taken. Insolation also is of use for obesity. Fat persons ought not to take a fragrant draught before a meal; and it will be best if they eat only once in the day. The body ought to be rubbed with nitre (soda), and the rougher salts. A large quantity of nitre in the bath is attenuant, but a small quantity only stimulates to nourishment. The following mixture is attenuant: Of pepper and Macedonian parsley, two parts, of asarabacca and anise, one half. This acts well, both as a diuretic and a cathartic.

COMM. COMMENTARY. This is taken from Oribasius. (Synops. v, 40.) Aëtius uses nearly the same words. (iv, 32.) Celsus recom-

mends the tepid salt-water bath, hard exercise, food of an acid or austere kind, and restricted sleep. (i, 3.) COMM.

Galen gives an interesting account of the manner in which he cured a person of obesity in a very short space of time. He says, "I first made him take quick exercise, and afterwards wiped off the sweat with a linen cloth. I then rubbed his body with the volatile ointments called acopa, and after this friction I led him to the bath. I did not then give him food at once, but directed him either to rest, or to follow any occupation he was inclined for, and then repeated the bath; after which I gave him as much food, not of a very nourishing description, as he was disposed to take." (De Sanit. tuendâ, vi, 8.)

Avicenna recommends hard exercise and frequent baths, and vinegar to drink. (i, 3, 4.) Rhases recommends fat persons to abstain from animal food, wine, milk, and all sweet things; to live upon pot-herbs, and such things as are saltish and sour; to take purgatives and diuretics, to use much hard exercise, and to remain long in the bath. (Ad Mansor. v, 61.) In another work he treats of this subject at great length. He recommends acids, and especially vinegar. In short, he agrees with Galen, that all things of a bitter, sour, and attenuant nature reduce obesity; and also that saltish things which have the property of opening the bowels do the same. Nothing, he says, tends more to reduce corpulency than frequent baths and hard friction. (Contin. iv.)

The directions given by Haly Abbas are to the same effect as those of Rhases, that is to say, he recommends fat persons to take hard exercise, to remain long in the bath, to use friction with oil of dill and the like, to live upon articles of food not too nutritious, not to indulge in protracted sleep, and to have frequent recourse to laxative and purgative medicines. (Pract. i, 16.)

Some remarkable cases of obesity are related by Athenæus. (Deipnos, xii, 12.)

The practice of the Methodists is described in a very circumstantial manner by Cælius Aurelianus. (Tard. Pass. v, 9.) They very properly condemned bleeding and purging, and depended principally upon strong exercise, hot baths, insolation, the sand-bath, hard friction, and a restricted diet.

SECT. LVIII.—HOW TO RECRUIT THOSE WHO ARE EMACIATED.

When we wish to recruit those who are reduced in flesh, we must give them thick wine and food containing thick juices, and prescribe slow exercise and moderate friction,—in a word, every thing contrary to the method we have been just describing. It may also be of use to be pitched for three or four days. If a person go into the bath with an empty stomach, he ought beforehand to get his body rubbed with linen cloths until it become ruddy, and afterwards, by hard but not frequent friction, the skin may be rendered thick and hard. Those who are pale, and not properly nourished, ought to be roused to anger and mental emotions.

COMM. COMMENTARY. This is either copied from Oribasius (Synops. v, 41), or from Aëtius (iv, 58.) The process of pitching the body is thus described by Aëtius: "Dried pitch is melted in a moderate quantity of oil, and, while still warm, is to be rubbed into the skin (the part having been previously shaved), and before it cools completely it is to be torn away. The plaster is to be again heated at the fire, and spread upon the skin; and before it becomes cold it is to be torn away. This process is to be frequently repeated." (iii, 180.) See Celsus (i, 3.)

Galen, in his Commentary on the second Aphorism of Hippocrates, expresses himself strongly on the danger of using precipitation in recruiting a person that has been emaciated. He evidently writes from ample experience, acquired in training the Athletæ. Hippocrates and his commentator repeat this rule the "ne quid nimis" in another place. See Galen (Op. t. v, 251, ed. Basil.)

Haly Abbas recommends moderate exercise, a short continuance in the bath, friction with emollient oils, much sleep, two or three meals every day, food consisting of fat meat, bread, almonds, &c. He also approves of pitching. (Pract. i, 16.)

Avicenna recommends pitching, the bath soon after taking food, soft friction, and the rest of the treatment recommended by Paulus. (i, 3, 4.)

Rhases treats of the same at great length. He approves of protracted sleep; of food consisting of fat meat, wheat, and

pulse; after food, of the bath, friction with oil, and the affusion of tepid water over the body; and also of red, thick, and sweet wines. (Ad Mansor. v, 60.) In another work he delivers the opinions of preceding authorities, accompanied with his own remarks. He agrees with Galen, that emaciation generally depends upon the state of the liver. They recommend nutritive articles of food, such as boiled and roasted flesh, and the bath, without friction, after a meal. Both speak favorably of pitching. They also approve particularly of sulphureous and bituminous baths. With regard to the bath, they explain, in another place, that it is proper in these cases only after the food is digested; for, if taken too soon after, it loads the body with unconcocted chyle; and that, if had recourse to at other times, it rather induces emaciation. Rhases again repeats that many of the legumina are very nutritive. He states that the wine should be particularly thick. (Contin. xiv.) Galen further says, that emaciated persons are to be recruited by thick wines, food consisting of thick juices, short exercises, and moderate friction. (Meth. Med. xiv, 16.) In another place he gives a very striking description of the bad effects of inanition. (De Venesect. adv. Erasistrat.) We would further direct attention to the description given by Hippocrates of a febrile state of the system, attended with delirium, which is sometimes brought on by too restricted a regimen in disease. (De Diæta morb. acut. § 11.) COMM.

On the treatment of convalescents, consult Celsus (iv, 25); Galen (Hyg.); and particularly Rhases (Contin. xxxiv). We shall give Celsus' directions in his own words: "Ex quocunque autem morbo quis convalescit, si tarde confirmatur, vigilare primâ luce debet; nihilominus in lecto conquiescere: circa tertiam horam leniter unctis manibus corpus permulcere: deinde delectationis causa, quantum juvat, ambulare, circumcisa omni negotiosa actione: tum gestari diu: multa frictione uti: loca, cœlum, cibos sæpe mutare: ubi triduo quatriduove vinum bibit, uno aut etiam altero die interponere aquam. Per hæc enim fiet, ne in vitia tabem inferentia incidat, et ut mature vires suas recipiat. Cum vero ex toto convaluerit, periculosè vitæ genus subito mutabit, et inordinatè aget. Paulatim ergo debebit, omissis his legibus, eo transire, ut arbitrio suo vivat." Galen and Rhases particularly recommend to convalescents to drink white astringent wines diluted with water. Both enjoin

COMM. a restricted diet at first, gentle exercise, and the bath in moderation. Haly Abbas cautions against premature friction and exercise, but recommends the tepid bath, and gentle unction with oils. (Pract. i, 25.) Syrasis recommends the warm bath, moderate friction with rough towels, and unction with a little oil. (Auctores de Balneis, p. 334.)

SECT. LIX.—HOW TO REMEDY EMACIATED PARTS OF THE BODY.

When emaciation takes place in any part of the body, it is commonly occasioned by long-protracted rest, or by bandaging for fractures. We must, therefore, stimulate their vital powers, and attract the blood to them, by using moderate friction, suitable exercise, and by the affusion of warm water upon them in moderate quantity. This must be done until the part becomes red and swells, and we must desist before it subsides. We must also use pitching, as formerly described. When there is a sense of cold in the part, it ought to be rubbed with linen cloths, or some calefacient medicine. For this purpose, I have sometimes used the thapsia, rubbing it in either with honey or cerate.

COMM. COMMENTARY. This is taken from Oribasius (Synops. v, 42), or Aëtius (iv, 34). See also Galen (de Sanit. tuendâ, v); Rhases (Contin. xiii); Haly Abbas (Pract. i, 16); Avicenna (i, 3, 4.) All recommend water to be poured on the part, and then it is to be rubbed with towels and hot stimulant oils, so as to produce a redness and glow in it. Most of them also approve of the pitch plaster.

SECT. LX.—THE DIAGNOSIS OF THE BEST TEMPERAMENT.

That man is in the best temperament of body when it is in a medium between all extremes, of leanness and obesity, of softness and hardness, of heat and cold, of moisture and dryness; and, in a word, who has all the natural and vital energies in a faultless state. His hair, also, should be neither thick nor thin, and in colour neither black nor white. When a boy, his locks should be rather tawny than black, but, when an adult, the contrariwise.

COMMENTARY. This Section is copied from Oribasius (Synops. v, 43), or Aëtius (iv, 53). See also Galen (de Temperam., de Opt. Corp. Constit., de Sanit. tuendâ, v, and Ars Med.) In the last mentioned, which was long the most celebrated of all his admired works, he has treated of the temperaments very systematically. Whatever Oribasius, Paulus, or any subsequent author, whether Greek or Arabian, have delivered on this subject is altogether derived from the works of Galen. COMM.

None of the Arabians has treated of the temperaments so learnedly as Haly Abbas. (Theor. i.) See also Averrhoes (Collig. vi); Alsaharavius (Theor. vi); Avicenna (Cant.)

SECT. LXI.—DIAGNOSIS OF THE TEMPERAMENTS.

Those bodies which are of a hotter temperament than the moderate will have their teeth earlier than usual, and will grow in like manner. They feel warmer to the touch, and have less fat; they are of a ruddy colour, have their hair black and moderately thick, and their veins are large. But if such a one be also fat and brawny, and have large veins, he is fat from habit and not from nature. The following are the marks of a cold temperament: Such bodies appear cold to the touch, are without hair, and are fat; their complexion, like their hair, being tawny. But when the coldness is great, they are pale, leaden-coloured, and have small veins; and if lean, this does not proceed from nature, but habit. The dry is harder and more slender than the temperate—the hardness, indeed, being inseparable from the dry temperament; but leanness not only follows the congenital temperaments, but also those which are acquired by long habit. It is a mark of hardness when the body is rendered unapt for motion, dry and parched, by drying applications. The humid, in all other respects, is like the temperate, but is softer and fatter, and the softness is inseparable from it; but the grossness not only follows the connate temperament, but also that acquired by long habit. It is peculiar to the humid temperament that the body is oppressed by things of a moist nature. The warm and dry temperament is extremely shaggy, having the hair of the head in early age of rapid growth, black, and thick; but, in after-life, baldness follows. The veins are large, as are likewise

the arteries, which beat strongly. The whole body is firm, well articulated, muscular, and without obesity; and the skin is hard and dark. When the temperament is cold and humid, the chest is narrow, and, like the rest of the body, without hairs; the skin is soft and white, and its hairs somewhat tawny, especially in youth; and such persons do not get bald when they grow old; they are timid, spiritless, and inactive; their veins are invisible; they are gross and fat; their muscles and legs are feeble, and their joints ill-formed; and they are bandy-legged. But should the humidity and coldness increase, the colour of their skin and hair becomes tawny, or, if they increase still more, pale. The hot and humid temperament is softer and more fleshy than the best temperament, and, when it increases much, is subject to putrid disorders; but, if it be only a little more humid and much hotter than the moderate, the bodies of such persons are only a little more soft and fleshy than the moderate, but they are much more hairy and hotter to the touch. But if the cold and the dry grow equally together, such persons have naturally their bodies hard, slender, and white, with fine muscles, small joints, and little hair; and they are cold to the touch. Although slender, fat is mixed with their flesh. The colour of their hair is correspondent to the degree of constitutional coldness. As to disposition of mind, they are spiritless, timid, and desponding. To say all in a word, with regard to the compound temperaments, they are always to be distinguished by the marks of the prevailing quality.

COMM. COMMENTARY. This Section is taken from Oribasius (Synops. v, 44), who borrows from Galen (Ars Med. c. 15.) See also all the authorities referred to in the preceding chapter.

The ancients, it will be perceived, connected the passions and desires of the mind with the temperaments; and, to establish the alliance between them, Galen wrote a treatise, wherein he has handled the subject very ingeniously, and has delivered many profound views of the animal economy. Galen's work, to which we allude, is entitled, 'Quod Animi Mores Corporis Temperamenta sequuntur.'

SECT. LXII.—ON THE FORM OF THE HEAD.

A small head is the peculiar mark of a faulty configuration of the brain, but a large is not necessarily a good one; for if occasioned by the strength of the vital powers of the part fabricating an abundant and proper material, it is a good sign; but if occasioned by the quantity of matter alone, it is not good. We must judge of heads then from their shape, and from the processes which arise from them: from their shape, if well formed, for that is always a good sign; and from the processes of the brain, if they be in their proper state, and if the nervous parts be all properly nourished, have their suitable tone, and if the sight be acute. Sharp heads are defective in the protuberance of the front or hind-head, or else it is unnaturally increased. Now, in most cases we shall find that these last, like the large, are faulty, and yet some of them, though rarely, are good, the formative principle being strong.

COMMENTARY. This Section is taken from Oribasius (Synops. v, 45); Aëtius (iv, 63); or direct from Galen (Ars Med. c. 6.) COMM

Psellus, like our author, remarks, that a small head, by contracting and binding, as it were, the brain, is necessarily a bad formation; whilst a large head, if it arises from excess of the natural powers, is good; but if it is occasioned by a collection of superfluous matter, the contrary. We would refer, in this place, to the curious account of the *Macrocephali* given by Hippocrates in his treatise 'On Airs,' &c. (§ 14), and to the interesting remarks in the same by M. Littré (t. iv, p. xi.)

SECT. LXIII.—THE MARKS OF THE TEMPERAMENT OF THE BRAIN.

A brain of the proper temperament has its vital energies and excretions moderate, and is not liable to be affected by any externals. Such persons, when infants, have the hair of their head somewhat tawny—when boys, yellowish—and when adults, a bright yellow; being also intermediate between the curly and the straight, and they do not readily fall out. When the temperament is hotter than moderate, all the parts about the head

are hotter and redder, the veins in their eyes are perceptible, their hair is grown at birth; and if much hotter, it is black, strong, and curly; but if not much, it is yellowish at first, and then grows black, and in more advanced life such persons become bald; their excretions are small when they enjoy good health; their head becomes filled and oppressed by heating food, drink, and odours, or by any external casualties. Such temperaments are satisfied with little sleep, and even that is generally not profound. The following are the marks of a brain which is colder than proper: The excretions are excessive; the hairs are straight, yellow, and durable; and it is hurt readily by cold things. Such persons are constantly seized with catarrhs and defluxions, the veins of their eyes are not visible, and they are much given to drowsiness. The following are the marks of a brain which is drier than natural: In the excretions nothing redundant, the senses acute, not being given to drowsiness, the hair strong and soon formed, rather curly, and soon falling out. In the more humid temperament, the hairs are straight, do not readily drop out; the senses are muddy, and the excretions redundant, sleep long and profound. In the compound of the hot and dry, the excretions of the head are small, the senses acute, there is a disposition to watchfulness, and baldness. Their hair at first is formed quickly and abundantly, is of a black colour, hot to the touch, and they are ruddy until manhood. But if moisture be joined to heat, and they are not immoderate, the colour and heat are good, and the veins of the eyes large. The excretions are plenteous and moderately concocted. The hair is straight and yellowish, and does not readily drop out. The head is easily filled and oppressed by heating and moistening things. But should an increase of humidity and heat take place, the head becomes diseased, and easily affected by heating and diluent things. Such persons cannot endure long watchfulness, but their sleep is disturbed by fantastical dreams, their sight is dim, and their senses not distinct. The cold and dry temperaments of the brain conjoined together render the head cold and pale, the veins of their eyes do not appear, and they are readily hurt by cold things: wherefore, their health is precarious. Their senses in youth are distinct and faultless, but as they advance in life soon decay. In a word, as far as regards the head, they experience a premature old age; their hair

after birth is of slow growth, stunted, and tawny. The humid and cold temperaments of the brain render those affected with them prone to lethargy and drowsiness; their senses are bad; they abound with recrementitious humours; are easily affected with cold and fulness of the head; and are liable to catarrhs and defluxions; but such persons do not readily become bald.

COMMENTARY. This is taken from Oribasius (Synops. v, 46), who abridges Galen. (Ars Med.) COMM.

As our author's description of the temperaments is sufficiently intelligible, and the others, whether Greeks or Arabians, deliver exactly the same views of the subject, without any material improvement, we consider it unnecessary to multiply references to, and extracts from them, on the present occasion; and, therefore, instead of crowding our pages with superfluous repetitions, we shall give in this, and the five following Sections, a brief exposition of the physiological doctrines of the ancients, with regard to the principal organs of the human body:

The ancients divided the powers or faculties of the human body into the Natural, the Vital, and the Animal. The brain they held to be the seat of the animal powers—that is to say, they considered it to be the organ from which sensation and motion are derived, and these, they maintained, are the powers by which animals are distinguished from vegetables. This doctrine is fully explained by Galen, in his work, 'De Facultatibus Naturalibus,' and by several of the Arabian authors, among whom we will venture to mention Haly Abbas, as being particularly worthy of being consulted on this subject. The brain, then, was accounted the seat of the five external senses, and of muscular motion, which also was reckoned as one of the senses by Hippocrates. (De Insomniis, c. 1.) Galen and his followers decidedly taught that the nerves of the senses are distinct from those which impart the power of motion, that the former derive their origin from the anterior part of the brain or cerebrum, and the latter from the posterior, called by the Greeks encephalis (under this term they comprehended the cerebellum, tuber annulare, and medulla oblongata of modern anatomists), or from its process, the spinal cord. They maintained that the nerves of the finer senses are formed of matter too soft to be the vehicles of muscular motion; whereas, on the other hand, the nerves of

COMM. motion are too hard to be susceptible of fine sensibility. See Galen (de Usu Partium, ix; de Administ. Anat. vii); Haly Abbas (Theor. iv); Averrhoes (Collig. iii, 33); Avenzoar (ii, 7); and Rhases (Contin. i.)

The ancients were also of opinion that the brain is the coldest viscus in the animal frame, being in this respect the antagonist of the heart, the heat of which they supposed that it counteracts. See Aristot. (De Part. Anim. ii, 7); and Pliny (Hist. Nat. xi, 49.) There appears to be some foundation for this opinion, since, as is remarked by Haly Abbas, those parts of the body which are vascular, and contain much blood, are naturally hot; whereas such as contain little blood are comparatively cold. Of this latter class are the brain, nerves, and fat. (Theor. i.)

The later Greek authorities, as, for example, Theophilus Protospatharius and Nemesius, adopt a division of the brain as regards its connexion with mind, to which Galen and his immediate followers appear to have been strangers. According to it, Fantasy is connected with the anterior part of the brain; Cogitation, or the *discursus mentis*, with the middle; and Memory with the posterior. See, in particular, Theophilus (p. 184, ed. Greenhill.) This hypothesis was received by all the Arabian writers on medicine. See, for example, Averrhoes (Collig. ii, 20.) It was evidently an approach to the arrangement adopted by the phrenologists of the present day, who maintain that intellect is seated in the anterior part of the brain; the moral feelings in the middle; and the animal appetites in the posterior.

SECT. LXIV.—THE MARKS OF THE TEMPERAMENTS OF THE STOMACH.

The marks of a preternatural dryness of the stomach are, that those affected with it are liable to thirst, but little drink satisfies them; and they feel heavy with much drink, as the superfluity occasions gurgling in the stomach, or floats upon it; of those of a more humid, that they are not addicted to thirst, and bear readily much liquids, and rejoice in humid food. A stomach preternaturally hot has a better digestion than appetite, particularly with regard to those things which are hard and difficult to digest; it delights in much food and drink; neither is it hurt by the moderate use of cold things. A preternaturally

cold stomach has a good appetite but not a good digestion, in particular with regard to such things as are of difficult digestion, and are of a cold nature, which therefore are apt to turn acid in it. And it delights indeed in cold things, but is readily hurt by the immoderate use of them. The intemperaments proceeding from disease differ from the congenital in this, that they long for opposite things, and not always alike. If the stomach then digests properly, it is of a moderate temperament; and if it does not it is of a bad; but if its eructations are fetid, its heat is inordinate and inflammatory; but if acid, the contrary. And in those who digest properly things of difficult digestion, the heat of the stomach is inordinate, and weak in those who cannot digest those things, but digest fishes. It must also be observed, whether or not the symptom is occasioned by any humour flowing from another part; for in pituitous constitutions acid eructations are apt to occur; but in the bilious, fetid airs and other disagreeable qualities are apt to prevail. The common symptom of them all is nausea. If the depraved humours swim within the cavity of the stomach, they float on the surface, and are discharged by vomiting; but if they are contained in the substance of it within its coats, they annoy it with vain attempts to vomit.

COMMENTARY. We shall now state briefly the opinions of the ancients with regard to the functional office of the stomach. COMM.

Actuarius says, "I am of opinion, that there are four species of concoction which are performed in different parts of the body: the first in the stomach; the second in the vena ramalis (vena portæ?), meseraic veins, and concave part of the liver; the third in the convex part of the liver and veins proceeding from it; and the fourth, consisting of fabrication or assimilation, which takes place in the extreme parts of the body." (De Urinis.) The various modes of change or concoction which the food undergoes in the body, are minutely described by Macrobius. (Saturnal. vii.) In another place, Actuarius says, "Digestion is performed by moderate heat and moisture." (De Spiritu Animali, p. ii, s. 1.) Alsaharavius in like manner states, that the digestive faculty depends partly on the heat, and partly on the humidity of the stomach. (Pract. tr. xvi, c. 1.) It is impossible not to see that the gastric juice is alluded to in these

COMM. passages. It is particularly stated of Asclepiades, that he held digestion to be the solution of the food. See C. Aurelianus. (Morb. Acut. i, 14.) And that the ancients were aware that the stomach secretes a fluid possessed of solvent properties, is put beyond a doubt, by the following extract from the works of Haly Abbas. Speaking of the changes which the food undergoes in the mouth and stomach, he says: "Immutantur cibi in ore, retinenturque, et flegmati admiscetur quod digestum est, calorque ei datur. Quod autem flegma hoc hujusmodi sit, signum nobis est quod impetigines et sarpedones curat, quædam maturat ulcera, scorpiones necat. Hac ergo de causa et in ore cibus immutatur. Sic et stomachus ipsum immutat: ejus etenim circum amplectitur substantia, quasque habet imprimit qualitates, immutaturque ipsius naturali calore cibus: *Sed et quoniam cibus ipse in eo flegmati admiscetur humido.*" (Theor. iv, 3.) The whole bearing of this passage, but more especially the last clause, puts it beyond a doubt that the process of digestion was supposed to be performed, in a certain measure, by the solvent powers of a fluid secreted in the stomach. And the ingenious Alexander Aphrodisiensis, in like manner, treating of the digestion of mustard, pepper, and other acrid substances, says decidedly, that their acrimony is dissolved in the copious fluid of the stomach. (Probl. i, 30.) See also Macrobius (Saturnal. vii, 8.) He calls the fluid ventralis humor, which may be literally translated, "gastric juice." Part of the process was, no doubt, supposed to be performed indirectly by heat; and deservedly, for even Spallanzani was compelled to admit, that the comparative temperature of animals exerts a considerable influence on their digestive powers. Hence, as was stated by Averrhoes, and as is confirmed by Cuvier, Birds, which are the warmest class of animals, likewise digest the fastest. At all events, the ancients were well aware, that digestion is not a mechanical, but a vital process, being performed by the principle of life. "Digestion," says Averrhoes, "is performed by concoction, and the concoction is influenced by heat, not that the first mover in the operation is heat, but the nutritive soul; because the operations of heat are indeterminate, and not directed to any manifest end." (Collig. v, 3.) In the 'Averroeana,' or 'Letters from Averrhoes to Metrodorus,' (which, whether genuine or not, contain a curious and interesting exposition of the *Great Commentator's* opinions

on various subjects, and at all events must be of considerable antiquity,) the doctrine of a gastric menstruum is discussed with singular ability. Metrodorus states, that "he found, by the writings of the physicians and philosophers of these times, that they make the *menstruum*, as they call it, whereby both appetite is provoked, and food in the stomach is digested, to be a certain juice or humour in the stomach," &c. Averrhoes denies that this menstruum acts by its acidity alone. COMM.

SECT. LXV.—DIAGNOSIS OF THE TEMPERAMENTS OF THE LUNGS.

Not only does the stomach render us thirsty and otherwise, and excite a desire of warm and cold drink, but also the thoracic viscera, namely, the heart and lungs, and likewise the liver. And drinking does not straightway allay the desire, but a small quantity of cold drink will rather allay the thirst than a great quantity of warm. Persons so affected are refreshed by inhaling cold air, which has no effect in alleviating the thirst of the stomach. Thus, also, those who are contrariwise affected, suffer sensibly from breathing cold air; this is the strongest mark of coldness of the lungs; but they also hawk up phlegm, and expectorate it with coughing. Dryness of the lungs is marked by freedom from excrementitious discharges and from phlegm; and humidity, by being excrementitious, and rendering the voice dull and hoarse; and the excrementitious discharge is also very great when they attempt to speak in a louder or sharper tone.

COMMENTARY. The ancients were of opinion, that the lungs are an accessory organ, made to administer to the heart. "It is the heart," says Aretæus, "which imparts to the lungs the desire of drawing in cold air." And in like manner, Theophilus holds that the other organs of respiration were made for the sake of the heart, in order that its innate heat may be cooled, increased, and nourished. (De Fabrica Hominis, p. 89, ed. Greenhill.) The physiologists differed respecting the uses of respiration. Thus, according to Galen, the famous Asclepiades held that it is for the generation of the soul itself, breath and life being thus considered to be identical; Philistion, Diocles, COMM.

COMM. and Aristotle, for the ventilation of the innate heat; Hippocrates for its nutrition and refrigeration; and Erasistratus for the filling of the arteries with spirits. All these opinions are discussed and commented upon by Galen, who determines the purposes of respiration to be twofold: first, to preserve the animal heat; and second, to evacuate the fuliginous portion of the blood. He was aware of the analogy between respiration and combustion, and comes to the conclusion that they are processes of a similar nature: he accordingly compares the lungs to a lamp, the heart to its wick, the blood to the oil, and the animal heat to the flame. (Galen. de usu Respir.) Aristotle gives the name of *pneuma* to the vital heat of animals, and ascribes the source and maintenance of it to the double functions of respiration and digestion. (De Pneumate.) See further, Third Book, s. 27.

The following extract from Alexander Aphrodisiensis will explain the opinions entertained by physicians and *savans* of a later age: "Wherefore there is a natural tepidity, the same I mean as the innate heat, whence springs the origin of the animal, its nature; for it is congenital with the animal, and therefore is called natural, being in the main the instrument of the soul's powers." (De Feb. viii.)

The following extract from Haly will show that the opinions of the Arabians on this subject did not differ from those of their Grecian masters, and more especially of Galen: "Respiration is necessary, for the sake of the heart, which is the fountain, and, as it were, the focus of vital heat, whence it is diffused over the rest of the body. It requires some aerial substance to ventilate the heat and ebullition of the heart, and in order to evacuate the fuliginous vapours which are found in it." (Theor. iii.)

SECT. LXVI.—THE MARKS OF THE TEMPERAMENTS OF THE HEART.

These are the marks of an unusually warm heart: largeness of respiration, quickness and density of pulse, boldness and maniacal ferocity, the chest is covered with hair, particularly the breast, and usually the parts of the hypochondriac regions adjoining to it; and the whole body is hot, unless the liver powerfully antagonise. And capacity of chest is also a mark of heat, unless the brain in that case antagonise. But an un-

usually cold heart has the pulse smaller than moderate, and such persons are timid and spiritless, more especially if there be no hairs on the breast. Dryness of the heart renders the pulse hard, and the passions ungovernable, fierce, and difficult to quell; and, for the most part, the whole body is drier than usual, unless the parts about the liver antagonise. These are the marks of a more humid temperament: a soft pulse, a disposition easily roused to anger, and easily pacified, and the whole body more humid than common, unless antagonised by the parts about the liver. When the temperament is both hotter and drier, the pulse is large, hard, and quick and dense; and the respirations large, quick, and dense. And of all others such persons have the most hair upon the breast and præcordia; they are prone to action, given to anger, fierce and tyrannical in their dispositions; for they are both passionate and implacable. But, if humidity prevails with heat, such persons are less covered with hair than the afore-mentioned; they are prompt to action, their disposition is not fierce, but only prone to anger; their pulse is large, soft, quick, and dense. But when the temperament is more humid and cold than common, the pulse is soft, the disposition spiritless, timid and sluggish; they have no hair on the breast, and neither indulge in lasting resentment, nor are prone to anger. A cold and dry heart renders the pulse harder and small. Of all others, such persons are least given to anger, but when provoked they retain their resentment. They are also particularly distinguished by having no hair on the breast.

COMMENTARY. In the ancient system of physiology, the heart was considered as the seat of the Vital powers, its office being the preservation of the innate heat of the body. The philosopher, Aristotle, had pointed out the connexion between heat and vitality, and had taught that the heart, as being the centre of heat, is the prime organ in the animal frame. Hence, as his commentator, Averrhoes, remarks, it is the *primum movens et ultimum moriens*. Galen, however, maintained with Hippocrates, that the animal frame is a circle, having neither beginning nor end, and that, consequently, it has no prime organ. He taught that the brain does not, properly speaking, derive its powers from the heart, nor the heart from the brain; but that these organs COMM.

COMM. are mutually dependent upon one another, the heart being indebted to the brain for supplying the parts concerned in respiration with muscular energy, and the brain being indebted to the heart for its vital heat, without which it could not continue to be the vehicle of sensibility and motion. (De Placitis Hippocrat. et Platon. pluries.) We have mentioned in the preceding Section, that the ancient physiologists looked upon respiration as being a process similar to combustion. See Galen (de Usu Respirationis), Alexander Aphrodisiensis (Probl. i, 16.)

The heart, then, was supposed to convey heat to all parts of the body, by means of the animal spirits incorporated with the blood in the arteries. Respecting the contents of the arteries, two hypotheses divided the ancient schools of medicine. The first was that of the celebrated Erasistratus, who maintained, that the arteries do not contain a fluid, but merely certain airs or vapours. The other hypothesis was that of Galen, who keenly attacked this, as he did most of the tenets of Erasistratus, and endeavoured to prove, by experiment, observation, and reasoning, that the contents of the arteries is blood, mixed, indeed, with a certain proportion of heat and airs, but in every respect a fluid, little different from that contained in the veins. It was also part of his system, that the right cavity of the heart attracts blood from the liver, and conveys it to the left, from which it is diffused all over the body by the arteries. He taught that, at every systole of the arteries, a certain portion of their contents is discharged at their extremities, namely, by the exhalents and secretory vessels; and that at every diastole a corresponding supply is attracted from the heart. He decidedly inculcates, in opposition to Asclepiades, that it is the expansion or diastole of the artery which occasions the influx of the blood, and not the influx of the blood which occasions the expansion of the artery; or, in other words, that the systole is the function of the heart, and the diastole its return to its natural state. (De Diff. Puls. iv, 10.) Though he demonstrated the anastomosis of arteries and veins, he nowhere hints his belief, that the contents of the former pass into the latter, to be conveyed back to the heart, and from it to be again diffused over the body. In a word, his system appears to have been nearly, or altogether, the same as that which was afterwards taught by the unfortunate Servetus.

It is clear, therefore, that Galen had made a very near ap-

proach to the Harveian theory of the circulation; indeed, Harvey himself candidly admits this. It will be perceived, from what we have stated, that the grand point of difference between Galen and Harvey, and that upon which the theory of the latter mainly rests, is the question whether or not at every systole of the left ventricle more blood be thrown out than is expended on exhalation, secretion, and nutrition. Upon this point Galen held the negative, Harvey, as we all know, the affirmative. COMM.

In proof of the opinions which we have attributed to Galen, we refer the reader to 'An Natura Sanguinis sit in Arteriis;' 'Administ. Anatom.' (vii, 15); 'de Usu Partium,' (vi and vii, 7, 8, 9); 'de Placitis Hippocr. et Plat.' (i, 5.)

See also Averrhoes (Colliget. ii, 8, ii, 9; Collect. i, 9; in Cant. Avic. i, 1); Avicenna (iii, xi, 1); Actuarius (de Spiritu Animali, i, 6; de Causis Urinarum, ii, 2); Nemesius (de Natura Hominis, 24.)

With regard to the passages collected by the ingenious M. Dutens and others, from the works of Hippocrates, Plato, Nemesius, Pollux, and Theodoret, to prove that the ancients were acquainted with the circulation of the blood, as taught by Harvey, we shall only remark, that, after having attentively considered them, we cannot but draw the conclusion, that some of these authors must have had, at least, an obscure idea of this doctrine, although, in general, these passages may be understood to refer merely to the lesser circulation and the movement of the blood from the centre to the extremities, as maintained by Galen. See Dutens (Origine des Découvertes attribuées aux Modernes, p. 157); Drelincurtius (de Lienosis Epimetris); and Littré (Introduction aux Œuvres d'Hippocrate.) The last of these writers, whose minute acquaintance with the earlier works on medicine entitles his opinion to every consideration, after a searching investigation into the state of anatomical knowledge in the days of Hippocrates and his immediate successors, comes to the conclusion, that the germ of the theory of the circulation is, beyond doubt, to be found in the Hippocratic treatises. (T. i, 223.)

SECT. LXVII.—DIAGNOSIS OF THE TEMPERAMENTS OF THE LIVER.

The marks of a hot liver are, largeness of the veins, redundance of yellow bile, and, in manhood, of black; the blood hotter than natural, and by means of it the whole body, unless the parts about the heart antagonise; and thick hairs upon the hypochondriac regions, and over the stomach. Those of a cold are, smallness of the veins, much phlegm, cold blood; the whole habit of the body colder than common, unless warmed by the heart; no hair on the hypochondriac regions, nor over the stomach. Those of a dry are, thick and scanty blood, and the veins and the habit of the whole body drier. Those of a humid are, the blood abundant and liquid, the veins softer, as also the whole body, unless the heart antagonise. The marks of a temperament at once hot and dry are, the hairs very thick on the hypochondrium, the blood at the same time thicker and more scanty, a redundance of bitter bile, and in manhood, of black, largeness and hardness of the veins, and the whole body hot and dry. The heat proceeding from the heart may indeed overcome the coldness proceeding from the liver, in like manner as the coldness may the heat; but it is not possible for the dryness to be changed to the contrary state by the humidity of the heart. It is obvious that, when the temperaments of those two prime organs combine together, the whole body is affected accordingly. The humid and hot liver, less than the hot and dry, renders the hypochondrium shaggy; but the blood is abundant, the veins large, and the whole habit humid and hot, unless the heart antagonise. But, should it be preternaturally changed as to both these qualities, persons so affected will be readily seized with putrid diseases and disorders from bad humours; and more particularly if the humidity be much increased, and the heat but little, they will be liable to cacochymies. In the humid and cold, the hypochondrium is free from hairs, but the blood is pituitous, the veins contracted, and the whole body in like manner, unless changed by the heart to the opposite state. The cold and dry renders the blood scanty, the veins of the body contracted, and the body colder; and the hypochondrium is without hair, unless the heart overcome this state.

COMMENTARY. According to the views of the ancient physiologists, the liver is the seat of the Natural powers, being the grand organ of sanguification, and the blood being the pabulum which nourishes the whole body. That the liver performs an important part in the fabrication of the blood seems probable from all the veins of the stomach and upper portion of the intestines passing to the liver, whereby it is to be supposed, that a considerable proportion of the nutritive juices will be conveyed to it; and from this viscus being proportionally large in the fœtus when it is much required to form blood, and cannot be supposed necessary for any other purpose. The ancients taught that the liver, by its attractive power, attracts the chyle from the stomach; that, by its retentive, it retains the same until the alterative convert it into blood; and that then the expulsive separates the superfluities of the blood, namely, the bile, and conveys them to the gall-bladder. See Galen (T. ii, 285, ed. Basil), and Avicenna (iii, 4, 1.) COMM.

Aristotle held that the spleen is part of the hepatic system. (De Partibus Animal. iii, 7.) His commentator, Averrhoes, in like manner, considers the spleen as a second liver. (Collect. i, 9.) Their reasoning, on this point, appears to me exceedingly acute and conclusive.

The following extract from Actuarius contains a clear exposition of ancient opinions on the subject we are treating of: "When the food in the stomach is changed and digested, the meseraic veins, which derive their origin from the liver, by their vein called ramalis, suck the stomach and intestines; and having emulged, as it were, the purer part, (namely, the food converted into chyle,) and having drawn it as if through a strainer, they convey it to the concave part of the liver, and deliver it over to the sanguificatory power. Here, then, if nothing impede it, when it is changed into blood, whatever is subtile and acrid is received by the gall-bladder, which is placed at the convex part of the liver, and attracts the bile; but whatever the blood possesses of a terrene and melancholic humour is attracted to the spleen, by some natural faculty, whereby every part attracts whatever suits its nature. Thirdly, the serous humour remains. It is attracted by the kidneys." (De Urinis, § 4.)

SECT. LXVIII.—DIAGNOSIS OF THE TEMPERAMENTS OF THE TESTICLES.

Of the temperaments of the testicles, the hot is lustful, apt to generate, particularly males, and at an early age has the genital parts covered with thick hairs, which extend to the surrounding part. The cold is the reverse. In the humid, the semen is copious and watery. In the dry, it is scanty and thick. A temperament which is moderately hot and dry has very thick semen, is most prolific, and rouses the person to early indulgence. Such persons have, at a very early period, thick hairs on their genital organs, and on the surrounding parts, as high up as the navel, and as low down as the middle of the thighs. Such a temperament is prone to venery, but is soon satiated, and readily hurt if compelled. When humidity combines with heat, such persons have thick hair, and much semen; yet they have not greater desires than others, but they can bear much venery without injury; and if both the moist and the hot combine properly together, they cannot safely abstain from venery. Those whose testicles are of the humid and cold temperament have no hair on the neighbouring parts; they are slow in beginning to copulate, and not much prone to the exertion. Their semen is watery, thin, without strength, and fit only for begetting females. The dry and the cold temperament together, resembles the former in every other respect, except that the semen is thicker, and altogether scanty.

COMM. COMMENTARY. The testicles were described by the ancient anatomists as being bodies composed of white glandular flesh, and surrounded by coats which they knew to be processes of the peritoneum. The semen they considered as a white frothy fluid, elaborated from the blood, by passing through the convolutions of the spermatic vessels. Aristotle held it to be a superfluity collected from all parts of the system. His theory of generation is similar to that of Buffon. For the hypothesis of the Epicureans, see Lucretius (de R. N. iv.) They taught that the fœtus is the joint production of the male semen, and something analogous secreted by the ovaria of the female.

Galen has very ingenious ideas respecting the first organi-

zation of the fœtus, which he ascribes to a certain power in the semen, like that which Blumenbach calls a *nisus formativus.* (De Form. Fœtus.) Comm.

SECT. LXIX.—ON THE PARTS THAT ARE OMITTED.

Each of our members has its own proper temperament and faculty; but it is not necessary for us to describe the characters of all, since they are unlimited, and we propose to give only a brief system of instruction. Having treated of those which principally affect the whole body, of the others we shall merely direct them to be judged of in the same way, forming an opinion of the temperaments from their excretions, their other energies and symptoms. It is now time to treat of the cure of the intemperaments of the whole body.

Commentary. On these consult Galen (de Temperamentis); Haly Abbas (Theor. iii); Avicenna (i, 1, 3.) We may mention that, generally speaking, all those parts which possess much blood were supposed to be of a hot temperament, and those which have little of a cold. Comm.

SECT. LXX.—THE CORRECTION OF HOT INTEMPERAMENTS OF THE BODY.

Since, in the hot intemperaments, the bile exceeds in quantity, if it pass downward, little, it is obvious, need be done; but, if carried upwards to the stomach, it ought to be evacuated by vomiting, by taking tepid water after exercise, and before food. It will be better that the exercise taken be not swift nor hard; but, on the contrary, rather slow and gentle. Some of those who are very hot do not at all require gymnastic exercises, but walking and the bath are sufficient for them. These delight also in baths after a meal. But those who have heat combined with dryness, require a diluent regimen by means of succulent food, baths, and abstinence from much and hard exercise; so that in the season of summer they ought to bathe early, and after a meal a second time. Cold drink is of service to them.

Venery is most inimical to dry temperaments. Such ought also to abstain from exertions producing lassitude, exposure to the sun, and to avoid cares and watchfulness. Those who are naturally humid are apt in infancy to be seized with rheumatic and plethoric complaints, and also with putrid. They stand in need of more exercise, of a proper digestion in the stomach, and of secretions by urine. Wherefore such persons are much benefited by taking before diet the bath two or three times, particularly the natural hot ones. They ought also to promote the secretions by means of exercises, and the bath, and by procuring the alvine and urinary discharges before taking food. And nothing hinders them to use masticatories and cathartics, as also a wholesome diet, and wine of a diuretic quality.

COMM. COMMENTARY. See, in like manner, Galen (de Sanitate tuenda, vi); Oribasius (Synops. v, 51); Aëtius (iv, 9); Actuarius (de Diæta, c. 12.) Of the Arabians, Haly Abbas is the author who has delivered the treatment of the temperaments in the fullest manner. (Pract. i, 15.)

It is to be remarked that the condition of the body named the hot intemperament by the ancients is the same as that now generally called a bilious habit. Accordingly, Galen directs the physician to attend whether any pain or sense of weight be felt in the region of the liver, as, in that case, he judges it unsafe to take the bath after a meal, and recommends him rather to give deobstruents, and to proscribe food of a thick viscid nature. He particularly recommends an attenuant diet, and medicines of the same description, namely, wormwood, anise, bitter almonds, &c. His views of practice, in short, appear to have been very judicious.

SECT. LXXI.—THE CORRECTION OF THE COLD INTEMPERAMENTS OF THE BODY.

Of cold intemperaments there are three varieties, the worst of which is the dry; for such persons are from the first in that state which time brings upon old men. They ought, therefore, to use whatever is diluting and warming, such as moderate exercise, humid and warm food, the heating wines, and much

sleep. Care should be taken by us, that all the excrementitious matters collected in the body be evacuated every day. Venery hurts all those who are affected with dryness, and more especially if joined to coldness, and is innocuous to the hot and humid alone. The cold and humid temperaments are bad, and are very subject to rheumatic affections: They are relieved by abstinence from the bath, by frequent and light exercises, and the use of moderately heating unguents. Those that are naturally colder, but are well regulated as to dryness and humidity of temperament, ought to stimulate and increase their heat, but to choose the medium between a humid and dry diet.

COMMENTARY. See the authorities referred to in the preceding Section. All, in a word, copy from Galen. (l. c.) COMM.

SECT. LXXII.—THE CURE OF THE DRY INTEMPERAMENTS, OF THE STOMACH FOR EXAMPLE; THEN OF THE OTHER INTEMPERAMENTS.

A dry intemperament may either be occasioned by the parts of uniform texture being drier than natural, in their solid parts, which is incurable; or by the natural moisture from which these parts derive their nourishment being lost. It is contained in all parts of an animal, being diffused through them in the form of dew, and can only be supplied by means of the food. The former variety is utterly incurable; and even the latter is of all states of the body the most intractable. But when the dryness is seated in the small veins and arteries, the cure may be attempted by filling each of the parts of uniform texture with their proper juices by a humid diet. A tepid bath is therefore beneficial, and the patient ought to remain long in the water. Immediately after the bath, let him take the milk of an ass newly drawn, to which a little warm honey has been added. Afterwards he ought to rest until he take a second bath. He ought then to be moderately rubbed with oil, if the milk appears to be digested, which may be judged of from his eructations and the distension of his belly. The proper interval between the first and second bath may be four or five hours at the equinox, if he be to bathe a third time, but, if not, it may

be greater. And he ought to be rubbed with oil before putting on his clothes after every bathing. If, therefore, the milk agreed with him, we may give it to him after the second time, or, if not, we may give, instead, a ptisan properly boiled, or alica made into a ptisan; he is then to rest until the third bathing, or otherwise until supper. His bread ought to be carefully prepared, baked in an oven, and of a fine quality; and as a seasoner, he may eat those fishes which are caught among rocks, or the hake in a white soup. In a word, his food ought to be of easy digestion and nutritious, not oily and excrementitious. His drink should be wine that is weak, white, clear, bearing little water, and having some astringency. Such is the mode of cure for the greatest degree of dryness; but the moderate does not require the same restriction as to diet, which may therefore be more generous. Let us suppose a dryness like the former, but mixed with a moderate coldness; and in this case, we must substitute certain calefacient articles; and, with regard to those mentioned above, we must add more honey to the milk, and give wine that is not so watery. We must also not only use things which are naturally heating, but which are so from their acquired qualities. And the body is to be rubbed frequently with the ointment of nard and mastich. When much coldness is joined to the dryness, know in the first place, that the complaint is difficult and intractable, but use the same remedies, and also by itself honey that has been boiled and scummed, along with very old wine. The best possible remedy in such cases is that which is much used by pitchers; and we must likewise rub the belly with it, and tear it away while it is yet warm. Such persons are also relieved by having a child of a full habit sleeping with them, so as to touch their belly. Let us next suppose that a moderate heat is joined to dryness. In this case, our first care ought to be, not to taste honey, and to use wine which is not aged, food which is tepid and milky, and to rub the belly with the oil of unripe olives, or with that of apples. But to cool such persons much is not devoid of danger, as their state is feverish when the heat prevails. Let us next suppose that a hot intemperament prevails, and that humidity is joined to it. Such an intemperament is to be cured by drinking cold water. The use of astringent food is also proper; namely, such things as are austere,

without being heating. But when the humid intemperament alone prevails, such articles of food as are desiccant, without heating or cooling much are beneficial, and also abstinence from the common drinks. When the humid intemperament is joined with the cold, the best remedies are all acrid things, and they ought to be mixed with such things as are astringent, without being decidedly refrigerant. The drink should be in small quantity, and consist of some of the strongly heating wines. These are the modes of curing intemperaments proceeding from qualities. But since a humour contained within the cavity of the stomach, or being absorbed within its coats, often occasions intemperaments, it will be proper to treat also of these affections. If the former state occur at once, it may be easily removed by emetics; but if it be a defluxion, the parts it comes from will require very attentive consideration, and the cure will follow, of course; for it is to be applied entirely to the affected part; and of the other parts, we need only take care that they be not thereby affected. The cure is to be performed by astringents, and such things as will bring the whole body to its proper habit. Depraved humours in the coats of the stomach are to be evacuated by moderately cathartic medicines, such as aloes, and the powder prepared from it, called Picra. When a viscid phlegm is contained in the stomach, such persons ought first to take those things which will cut it, and then it may be purged off, or evacuated by vomiting with radishes. When the humour is neither viscid nor thick, a vomit from ptisan, or that from honied water, may be sufficient. The juice of wormwood with honied water may also be drunk. In like manner, intemperaments in other parts may be cured, by finding out the evacuation suited to the humours; or, if the part has no sensible discharge, the prevailing matters and humours may be evacuated in the form of vapour; and in like manner, if it proceed from flatulence.

COMMENTARY. Galen supplies all the matter of this Section. (l. c.) COMM.

The modern ideas respecting the temperaments, appear to be founded upon the descriptions given by the Arabians of the symptoms which characterize the prevalence of the four humours, as they were called, namely, blood, yellow bile, black bile, and

COMM. phlegm, in the body. In proof of this, we subjoin Rhases' brief description of them: "De complexione autem infirmi scias, quod si fuerit albi coloris admixti rubedini, et si fuerit bonæ carnis, subtilis cutis, et quando locum fricaveris, rubescit statim, significatur quod materia est sanguinea. Et si corpus fuerit pingue, et albi coloris non mixti rubedini, et corpus nudum pilis, venis strictis, carne molli, occultarum juncturarum, gracilium ossium, et generaliter talis dispositio qualis est in corporibus mulierum, significatur quod materia est phlegmatica. Et si fuerit macrum, citrini coloris, pilosum, et cum crassis venis, et manifestis juncturis, ostendit quod materia est cholerica. Et si fuerit niger color, durities corporis, pilositas, asperitas cutis, significatur quod materia est melancholica." (De Affect. Junct. 2.)

It is to be understood, however, that Galen's system of the temperaments was not based, as has been often erroneously represented, upon any hypothesis respecting the humours.

SECT. LXXIII.—ON THE POWERS OF THE ARTICLES OF FOOD.

Since an account of the properties of food is a part of the doctrine of Hygiene, we shall add that to the preceding, having premised only a few remarks before delivering the particular rules on this head; for nothing is more indispensably necessary than to be well acquainted with the properties of food. Things of an attenuating power open the pores, and clear away the viscid humours which are impacted in them, and cut and attenuate the thick; but when persevered in as articles of food, they beget serous and bilious superfluities, or, if still longer continued, they render the blood melancholic. One ought therefore to abstain from the continued use of them, and in particular those who are of a bilious temperament; for they only suit with those who have collections of phlegm, and of crude, viscid, and thick humours. Those of incrassating powers are sufficiently nutritious, and, if properly digested in the stomach and liver, they form good blood, but occasion obstructions of the spleen and liver. Of these some have only thick juices, as the dried lentil, but some viscid, as the mallows; and in some they are both thick and viscid, as the testaceous fishes. An attenuating diet is safer than an incrassating for the preservation of health, but yet, as it supplies little

nourishment, it does not impart tone or strength to the body. One ought, therefore, to take some moderately nutritious food, when experiencing the effects of a deficient diet. They may do so with the least danger who are given to exercises and can take as much rest as they please. But all those who cannot take exercise before food ought to avoid such things as are incrassating; and those who are of an indolent habit ought by no means to take such food. For complete inactivity is one of the greatest evils for the preservation of health, whereas moderate exercise is particularly good. Those articles of food which are intermediate between the incrassating and the attenuating are the best of all, producing blood of a proper consistency. Such a diet, then, agrees with our bodies, but that which produces a bad chyme ought to be shunned. It is better also to avoid variety of food, more particularly if it consist of contrary qualities; for such things, when taken together, do not digest properly.

COMMENTARY. The ancient writers on Dietetics are, Hippocrates (de Diæta, de Affectionibus, et alibi); Celsus (ii); Dioscorides (Mat. Med. ii); Galen (de Facult. Alim., et de Probis Pravisque Aliment. Suc.); Xenocrates (de Aliment. ex aquat.); Oribasius (Med. Collect. i et seq.); Aëtius (ii); Simeon Seth (de Alimentis); Actuarius (de Spiritu Animali, p. ii); Anonymus (Tract. ap. Ermerins Anecdota Græca); Marcellus (Sideta de Piscibus); Psellus (Carmen de Re Medica); Rhases (ad Mansor. iii, Cont. xxxiii); Avicenna (Cantic. p. ii); Averrhoes (Comment. de Cantic); Haly Abbas (Theor. v, 15); Athenæus (Deipnos. passim); Plutarch (de Sanitate tuenda, Symposiacon); Macrobius (Saturnal. vii); Cælius Apicius (de Opsoniis); Geoponica (xii); Horace and Martial (pluries.) COMM.

Of all the ancient writers on Dietetics, Galen is beyond dispute the best. In the two treatises mentioned above, he has treated of everything connected with this subject so fully and so correctly, as to leave little to be supplied even at the present day. All the subsequent authorities in general are his servile copyists, with the exception of Averrhoes, who commonly differs from him only by deviating into error.

The ancient philosophers were at great pains to explain why

COMM. a regular supply of food is necessary to the existence of animals. On this subject, Timæus Locrus, Plato, and Aristotle have philosophised with great acuteness and ingenuity. No one, however, has given a plainer account of the matter than the poet Lucretius in the following verses:

"Illud item non est mirandum, corporis ipsa
Quod natura cibum quærit quoiusque animantis;
Quippe etenim fluere, atque recedere corpora rebus
Multa modis multis docui, sed plurima debent
Ex animalibus iis, quæ sunt exercita motu;
Multaque per sudorem ex alto pressa feruntur,
Multa per os exhalantur, quam languida anhelant:
His igitur rebus rarescit corpus; et omnis
Subruitur natura dolor quam consequitur rem.
Propterea capitur cibus, ut suffulceat artus,
Et recreat vires interdatus, atque patentem
Per membra ac venas ut amorem obturet edendi."

(De Rerum Nat. iv, 856.)

The explanation given by one of Rhases' authorities is to the same effect. He says: "Since our bodies are in a continual state of waste from the surrounding atmosphere, and the innate heat which is within, it behoved them to have nourishment to supply the part which is melted down; and, as all the food which is taken is not assimilated, it was necessary that there should be passages for the discharge of the superfluities."

Hippocrates, Aristotle, Galen, and Musonius (ap. Stobæi Sentent. 18) remark that the stomach is to animals what the earth is to vegetables.

Our author's general remarks on the properties of food are condensed from Galen's work (De Prob. p. Al. suc.) Horace agrees with Galen and our author in condemning the mixture of various articles of food. (Satir. ii, 2.) The arguments for and against this practice are very ingeniously stated by Macrobius (Saturn. vii, 5, 6.) It appears that Asclepiades maintained the opinion that a multifarious diet is most easily digested. (Celsus, iii, 6.)

The ancients had the following meals during a day corresponding to those now in use: breakfast, *jentaculum*, *ἀκράτισμα*; dinner, or rather lunch, *prandium*, *ἄριστον*; soirée, *merenda*, *ἐσπέρισμα*; supper, *cœna*, *δεῖπνον*. To these may be added the

commissatio, κῶμος, which was a sort of jollification after the great meal or supper. See Athenæus (lib. i); Jo. Bruyer (de Re Cibar. iii, i); Lambinus (in Plut. Truculent, ac. i, sc. 7, l. 16); Potter (Arch. Græc. iv, 16.) The common hour of breakfast was about 7 o'clock a.m., of dinner about 3 p.m.; and of supper about 8 p.m. The practice, however, of taking so many meals appears to have been disapproved of by the physicians and *savans*: for we find Actuarius discussing the question whether it be proper to eat twice or only once in the day; and Galen decidedly recommends people not to take food in general oftener than twice. Cicero even forbids to take two full meals in a day. (Tuscul. Quæst. v.) Hippocrates speaks with disapprobation of the practice of eating a full dinner. (De Vet. Med.) Suetonius makes it a reproach to Domitian that he dined fully. (In Domit.) Haly Abbas enters into a full examination of the question with regard to the number of meals. Some, he says, eat only once in the day, some twice, and others three times. He advises those persons who are actively employed not to dine, because, if obliged to take exercise immediately afterwards, the body will be loaded with half concocted chyle. Upon the whole he prefers supper to dinner. (Pract. i, 13.) Alsaharavius considers one meal in the day not sufficient for persons of a gross habit of body. He advises persons not to change even a bad regimen too suddenly. Rhases remarks, that to take another supply of food before a preceding meal is digested, will prove highly prejudicial to the health. COMM.

From the views of domestic life given in the Greek novels we are inclined to think that the supper was the only meal which all the members of a family of the better class partook of together. See in particular Achilles Tatius (pluries.) The breakfast and dinner were light meals, consisting of bread or cheese dipped in wine. (Apul. Metam. and Martial Epigr.)

The ancient physicians attached great importance to the proper regulation of the diet. Galen seriously admonishes his readers not to eat thoughtlessly, like brute beasts, but to consider attentively what kinds of food and drink they find from experience to be prejudicial to them. (De Sanit. tuenda, vi, 13.)

According to Athenæus, a good physician ought to be a good cook. (Deipnos. vii.) Upon the authority of Daphnus, the Ephesian physician, he decides that night is the most proper

COMM. time for taking the supper or principal meal, because, says he, the moon promotes putrescency, and digestion is a species of putrefaction. (vii, 2.)

The processes which food undergoes in the body from its first introduction to its complete assimilation are stated in a very scientific manner by Macrobius. In the first place, he says, it is dissolved in the stomach, as much of it at least as is digestible, and that which is not soluble passes down to the intestine, while the chyme, or portion which has been dissolved, passes to the liver, there to undergo the second process of digestion, namely, sanguification, or conversion into blood. It then passes into the arteries or veins, where it undergoes its third species of digestion, namely, purification, by having its recrementitious particles sent off in the form of bile and urine. It is then conveyed to the different parts of the body where the fourth process of digestion is accomplished, namely, assimilation, by which it is converted into the different substances of which the body is composed. (Saturnal. vii, 4.)

SECT. LXXIV.—ON POT-HERBS.

The lettuce is manifestly refrigerant and moistening; it is therefore soporific, and, compared with other pot-herbs, nutritious, forming blood of a very good quality. The endive is refrigerant and moistening, but less so than the lettuce. The mallows cool but not obviously: they rather moisten and thereby loosen the belly; and this they do by means of the viscid juice which they contain. The beet is detergent, and thereby softens the belly; but when eaten in great quantity it occasions pain of the stomach: it removes obstructions of the liver and spleen. The cabbage, when twice boiled before it is eaten, binds the belly, but when only once boiled for a short time, it rather loosens, if eaten with oil, sauce, or salts; as its juice, still more than the dried lentil, is of a purgative quality; and in particular the sea-cabbage is laxative of the belly, being manifestly saltish and bitter. The sea-purslane tree, possessing stronger saline qualities, loosens the belly, and agrees better with the stomach than the cabbage, from having a moderate astringency; it is also fitted for forming milk and semen. The blite and orache (*atriplex*

hortensis) and such like are succulent and laxative, but not nutritious. All the thorny tribe, such as the cardoons, the atractylis, and such like are stomachic, except the *cinara*, for, being hard, it forms bad chyme; and, therefore, it is best to take it boiled with oil, fish-sauce, and coriander. The parsley, the horse-parsley (*smyrnium olusatrum*), the water parsnip, and the allsander, are diuretic; but the allsander is aromatic, and more acrid, diuretic, and emmenagogue, whereas the parsley and horse-parsley are sweeter, and, therefore, agree better with the stomach. The rocket (*brassica eruca*) is hot, and forms semen; and, therefore, rouses to venery and occasions headachs. The cress, basil (*ocimum*), and mustard are hot and acrid, particularly the cress; but all are of difficult digestion, injure the stomach, and supply unwholesome juices. But the nettle is attenuant, laxative, and of little nourishment. The toothpick-fennel is like the shepherd's needle, possessing astringent and bitter qualities in no small degree; it is beneficial to the stomach, so that those who have lost their appetite may eat it with advantage in vinegar; but it supplies little nourishment to the body. All the wild pot-herbs, as they are called, contain very bad juices. Capers, however, whet the appetite, remove obstructions of the liver and spleen, and evacuate phlegm. They are to be used with vinegar and honey, or with vinegar and oil, before taking any other food.

COMMENTARY. Athenæus remarks that the use of pot-herbs, as articles of food, appears to have been very ancient, since several of them are mentioned by Homer. (Deipnos, i, 29.) Diphilus says, "all pot-herbs in general contain little nutriment, are attenuant, engender bad juices, swim in the stomach, and are of difficult digestion." (Deipnos, ii, 28.) Actuarius states, that pot-herbs in general form a thin and watery blood, compared with that from thicker articles of food. COMM.

The ancients ate their pot-herbs with much oil, and generally a liberal allowance of hot spices. See Apicius (iii.) A sauce from pickled fish, vinegar, or old wine, was often added to the preparation. The poet Juvenal makes mention of a miser who ate his cabbage with the oil from lamps. (Sat. v, 87.) Celsus remarks of such things, "Quodcunque ex olio garove estur olus alienum stomacho est."

COMM We now select from the dietetical writers a few remarks on the most important articles of this class.

Galen strongly recommends the lettuce as a cooling, moistening, and soporific herb. He relates that he cured himself of morbid insomnolency by eating liberally of lettuces. The soporific property of lettuces is mentioned by Dioscorides, Pliny, Athenæus, Rhases, Haly Abbas, Simeon Seth, and most of the other authorities. It is even said by Simeon Seth and Florentinus (Geopon. xvii, 13), that the juice of it when rubbed upon the forehead induces sleep. We need scarcely remark, that the lettuce was lately restored to its place in the Materia Medica as a soporific. Martial directs the lettuce to be eaten at the beginning of a feast (xi, ep. 53) ; Athenæus at the end.

Athenæus mentions that mallows are praised by the poet Hesiod. (Op. et Dies. i.) He adds, "Diphilus relates that mallows have good juices, smooth the trachea, are easily evacuated, and prove moderately nutritious." Damogeron says that when eaten with fish sauce and oil, they loosen the belly. (Geopon. l. c.) Galen and Aëtius state that they lubricate the intestines more than lettuce, but are not so refrigerant. In a word, mallows were in great repute with the ancients, as being inferior to none of the oleracea. Horace calls them "gravi malvæ salubres corpori." (Epod. ii.) The poet Martial mentions them as being laxative. (x.) Different species of mallows were probably used by the ancients for food, but more especially the *Malva rotundifolia* L.

Galen states that the juice of the beet is thinner and more detergent than those of the lettuce and mallows. He says that, when twice boiled it becomes astringent. Apicius recommends boiled beet to be eaten with mustard, a moderate proportion of oil, and vinegar. Beet-root, according to Actuarius and Simeon Seth, is difficult to digest, flatulent, and laxative. Dioscorides and Diphilus, however, state that beet contains better juices, and is more nutritious than cabbage. Athen. (Deipn. ix.) Galen recommends its pickled roots as deobstruent in infarction of the liver and spleen. (De Alim. Facult. ii.)

The wild succory and the endive or garden succory were much used by the ancients as pot-herbs. Galen briefly states, that in properties they resemble lettuces, but are less delicious. According to Simeon Seth, they are slightly cooling and moist-

ening. The endive, he says, when boiled with vinegar is astringent. Rhases praises it as a deobstruent in affections of the liver. Apicius directs it to be dressed with fish-sauce and oil. Its boiled roots were also prepared as a pickle. COMM.

The brassicæ, or cabbages, were great favorites of the elder Cato. (De Re Rust.) Horace states correctly, that such as grow in the country are better than those which are raised about towns. (Sat. ii, 4.) According to Galen, their juices are laxative, but their solid parts astringent. Brocoli, says Rhases, when not pickled are not heating, and being flatulent they engender semen: those that are pickled are more heating, occasion thirst, supply bad nutriment, and inflame the blood. Is *brocoli* an Italian word, or an Arabian, formed from *caulis* with a prefix?

The halimus, according to Sprengel, is the *atriplex halimus* L., called by Miller the sea purslane; but by others it is referred to the *salicornia fruticosa* L. Dioscorides says that its leaves when boiled are used for food. (i, 120.)

Rhases and Haly Abbas state that spinach is laxative and wholesome. The Greeks and Romans appear to have been unacquainted with it.

The atractylis is supposed by Sprengel to be the *carlina lanata* L. a woolly carline thistle. Dioscorides and Pliny recommend it as an antidote against poisons; but it seems to have been little used as a pot-herb.

The nettle (either the *urtica dioica* or *pillulifera*) is mentioned as a pot-herb by Theophrastus (H. P. vii, 7), and most of the medical authorities. Psellus calls it laxative.

The scandix, or shepherd's needle, was in little repute as an article of food; and hence Aristophanes makes it a subject of reproach to Euripides, that his mother sold not good pot-herbs, but scandix. (Achar. act. ii, sc. 4; Pliny, H. N. xxii, 38.)

Galen says that the gingidium is eaten in Syria, like the scandix in his country. It has been supposed, by Bruyer and others, to be the chærophyllum or chervil; but, according to Ludovicus Nonnius, this is a mistake. We are inclined to refer it to the *daucus gingidium* L., or picktooth.

Galen, Aëtius, and Simeon Seth speak of the cinara as an unwholesome pot-herb. It may be eaten, however, Galen says,

COMM. with oil, fish-sauce, and wine and coriander. Many of the authorities have referred it to the artichoke, but it seems to be now settled that no ancient writer has noticed *it*, with the exception of Columella, who has given a very striking description of it. (x, 237.) We cannot decide positively what the *cinara* was.

Dioscorides says, that the scolymus is eaten like asparagus. (iii, 16.) It is the *scolymus Hispanicus*, or Spanish cordoons.

The hipposelinum appears to have been the *smyrnium olusatrum*. See Harduin's note on Pliny (H. N. xix, 48), and Sprengel (ad Dioscor. iii, 71.) Dioscorides says it is used as a pot-herb, like parsley, its root being eaten boiled or raw, and its stalk and leaves boiled, either alone or with fish. It is not to be confounded with the smyrnium of the ancients, which is the *smyrnium perfoliatum*. Dioscorides says that the latter, when pickled, is used as a pot-herb, and is astringent.

Galen says that the blite and orache are watery pot-herbs, and almost insipid. Seth, and the other authorities who notice it, agree that the latter is cooling and laxative. The blite is still much used as a pot-herb in Spain and Italy. It is the *blitum capitatum*.

Xenophon mentions that the ancient Persians lived very much upon cresses, using them as a seasoner to their food. (Cyroped. i, 2.) According to Aëtius and Simon Seth, they are calefacient and desiccative. Seth calls them aphrodisiacal. On the aphrodisiacal powers of the cresses and rocket, see Section XXXVI.

The sion was probably the *sium nodiflorum*, procumbent water-parsnip. It was used as a substitute for the cress.

Dioscorides says that the root of the dracunculus, or dragon-herb, is sometimes eaten as a pot-herb, both when boiled and raw. He mentions that the inhabitants of the Balearian Isles mix its root with honey, and use it at their banquets in place of cakes. (ii, 16.) Simeon Seth notices it by the name of tarchon, being a corruption from Tarragona. He calls it flatulent and unwholesome, and says that its leaves only are to be used along with mint and parsley. Galen and Rhases likewise mention it as an article of food. The aron was a plant nearly allied to it, but one which it is difficult to determine accurately.

Mustard, as Hippocrates remarks, is of a hot and purgative nature. Seth says that it promotes the digestion and distribution of the food. Rhases forbids it to be eaten, except along with thick articles of food. Comm.

Pliny mentions the ocymum or basil in very unfavorable terms.

The dock, *rumex* L., is sometimes mentioned as a pot-herb, but does not appear to have been much in use. Horace alludes to its laxative properties. Galen says some women affected with *pica* and *bizarre* children eat the oxylapathum (*rumex acutus* L.) raw, but that it is still less nutritious than the lapathum.

Capers, says Aëtius and Seth, consist of different qualities, as bitterness, which renders them detergent, purgative, and penetrative; acrimony, which makes them calefacient, discutient, and attenuant; and sourness, which renders them astringent. Serapion says that, when pickled with vinegar, they strengthen the stomach and whet the appetite. When pickled with salt, he says, they are bad for the stomach. Galen recommends pickled capers in obstruction of the liver and spleen.

The buglossum, or borage, is frequently mentioned as a herb which, when eaten, imparts gladness to the soul. Ludovicus Nonnius informs us that the Belgians still fancy that it possesses this property, and look upon it as the Homeric nepenthes.

We have had occasion to mention in another place that the ancients were fully persuaded of the aphrodisiacal properties of the eruca, or rocket.

The strychnos has been generally supposed to be some species of *solanum*. It is mentioned as a pot-herb by Theophrastus, Dioscorides, and Galen, but was in little repute. Several other plants are mentioned as pot-herbs by the dietetical writers, such as fennel, anise, dill, hyssop, and wild thyme, but they are of little importance.

SECT. LXXV.—ON ASPARAGI OR YOUNG SHOOTS.

Blites, lettuces, orachs, mallows, and beets have the plant juicy, but the shoot dry. The turnip, mustard, radish, cress,

pellitory, cabbage, and other hot things, have the plant of a dry, but the shoot of a juicy nature. The shoots of the bushy shrubs, both the marsh and garden, and that of the bryony, are stomachic and diuretic, but of little nourishment, yet when digested they are more nutritious than those of pot-herbs. Such also are the shoots of the ground-bay.

COMM. COMMENTARY. See Suidas (in Voce); Galen (de Alim. Facult.); Humelbergius ad Apul. (de Med. Hist. 84.) Our author's account of the Asparagi is abridged from Galen. He remarks that the young shoots of the cabbage, called cymæ, are particularly tender. Apicius directs them to be prepared with cumin, salt, old wine, and oil; to which pepper, borage, and the like may be added.

On the Asparagi, see Athenæus. (Deipnos. ii.)

The plant now commonly known by the name of asparagus is said by Simeon Seth to be so nutritious that it deserves to hold an intermediate place between pot-herbs and flesh. He remarks, that it is diuretic, and imparts its smell to the urine. The wild asparagus is called corruda by Cato, Columella, and Pliny.

SECT. LXXVI.—ON HERBS HAVING ESCULENT ROOTS.

The bunias or turnip, when eaten after being twice boiled, is nutritious, no less so than other herbs, but when frequently taken it engenders thick juices. The bulbi are astringent and detergent, whet the appetite, strengthen the stomach, and evacuate the viscid humours contained in the chest. When twice boiled, they are more nourishing, but less expectorant, having lost their bitter principle. They are productive of semen, and aphrodisiacal when liberally used, and occasion flatulence and griping. When eaten with fish-sauce and oil, they are very sweet, do not create flatulence, are nutritious and digestible. The garden and wild carrot and the caraway have roots which are less nutritious than turnip, but hot, decidedly aromatic, and diuretic. But when used too freely, they supply bad juices, and become of difficult digestion, like other roots. Some call the wild carrot *daucus;* it is evidently more diuretic than the other. The radish is of an attenuant and heating nature; but may be eaten

before other food along with vinegar and fish-sauce, to loosen the bowels, but by no means after a meal. The onion, garlic, leek, and dog-leek (*ampeloprason*), being of an acrid nature, warm the body, attenuate and cut the thick humours contained in it; when twice boiled, they give little nourishment, but when unboiled they do not nourish at all. The garlic is more deobstruent and diaphoretic than the others; and the dog-leek, being wild, is drier than the common leek. Regarding pot-herbs in general, the raw, when eaten, furnish worse juices than the boiled, as they have more excrementitious juice. But those which are prepared for pickles with brine or vinegar and salt are stomachic, and whet the appetite, and discuss crude humours; but are of difficult digestion, and supply bad juices when too freely taken.

COMMENTARY. Galen thus delivers the general character of these substances: The roots of pot-herbs which are acrid, such as those of onions, leeks, garlic, radish, and carrot, contain bad juices; but those of turnips, rapes, and caraways hold an intermediate place between things of good and of bad juices. COMM.

It is well known that the Romans had two kinds of herbs with esculent roots, called the napus and rapum, and that they are generally admitted to have been two species of the turnip. See Columella (de R. Rust. ii, 10); Pliny (H. N. xviii, 13) and the note of Harduin; Sprengel (R. H. H. t. i.) The term bunias occurs first in Nicander; and that it was synonymous with the gongylis is declared by Galen and our author; and, further, that it was the *brassica napobrassica* L., or wild navew, is admitted by all the late authorities on classical botany, with the exception of Dierbach, who most unaccountably contends that it is the *B. oleracea*. Galen says that unless well boiled it is indigestible, flatulent, and bad for the stomach. Seth assigns it the same qualities as our author. All account it diuretic and aphrodisiacal. Apicius directs the rapa and napi to be eaten with cumin, rue, vinegar, oil, &c. (iii, 13.) Cato the Censor was very fond of turnips, and used to prepare them with his own hands. It appears from Athenæus that the ancients frequently ate their turnips roasted. They also ate turnips prepared as a pickle with vinegar and mustard at the commencement of a feast, as whetters. (Deipnos. iv, 11.)

COMM. According to Diphilus, in this state they are more attenuant than in their natural state. (Deipnos. ix, 8.)

It is not well ascertained what the esculent bulbi of the ancients were. Harduin conjectures that they were a delicious kind of onions. Matthiolus and Nonnius are wholly undecided. Sprengel inclines, with Dalecampius and Sibthorp, to think that they were a species of muscari, or musk hyacinth. The account given of them by Serapion, who calls them *capæ sine tunicis*, agrees better with the conjecture of Harduin. Eustathius likewise says that the bulbus was a wild onion. (Ad Iliad. xiii, 589.) Columella, Varro, Apicius, and Martial call them aphrodisiacal.

The staphylinus was probably the carrot, or *daucus carota*, but we are inclined to think that it also comprehended the parsnip. See Athen. (Deip. ix, 2.) Apicius, among other methods of dressing it, directs it to be done with salt, pure oil, and vinegar.

The sisarum was probably the garden parsnip, *pastinaca sativa* L.

The carus seems indisputably to have been the *carum carui* L. Dioscorides says that its boiled root may be eaten like the carrot. Seth praises it as being carminative, diuretic, and astringent. Apicius mentions it frequently along with spices and other aromatics.

The characters of the onion, garlic, and leek are taken from Galen. Celsus calls them calefacient, and ranks them with things having unwholesome juices. Actuarius prefers the leek to the onion and garlic. The latter is warmly eulogised by Galen, as being the rustic's theriac. Horace had not so much favour for it. (Epod. iii.) Galen calls the ampeloprason the same as the wild leek. (De Fac. Simp. vi.) Dioscorides describes two species of the porrum, namely, the capitatum and sectivum.

The asphodel (*asphodelus ramosus*) is mentioned as an article of food by the poet Hesiod. Galen, however, speaks of its being eaten only in times of scarcity.

Galen directs radishes to be eaten before dinner, as a laxative. He justly expresses his surprise at the practice of certain physicians, and other persons of his time, who ate radish after dinner to promote digestion. The wild radish was called armoracia by the Romans, as we are informed by Dioscorides.

SECT. LXXVII.—ON TRUFFLES AND MUSHROOMS.

The truffle (*tuber*) forms chyme devoid of qualities, but cold and thick. The mushrooms called *mycetæ*, being of a cold nature, form phlegm and bad chyme. Of these, the *boleti* are devoid of qualities, and are safer than the others when boiled properly. The *amanitæ* are of the second order. The other mushrooms ought not to be tasted, for many of them are mortal poisons; and even the *boleti*, when eaten without being properly boiled, have often proved dangerous.

COMMENTARY. Diphilus says "Fungi are grateful to the stomach, laxative, and nutritious, but of difficult digestion, and flatulent." (Athen. Deipnos. ii, 19.) He adds, "the nature of truffles is, that they are difficult to digest, supply good juices, and are laxative; but some of them, like the fungi, occasion suffocation." (Ibid. 51.) Galen says that they contain cold, viscid, and thick juices. Serapion says that they engender gross humours. According to Avicenna they are apt to superinduce apoplexy and paralysis. Simeon Seth says that truffles occasion crude and depraved humours. He directs them to be steeped in water for some hours before boiling them; and prepared with pepper, marjoram, salt, and rue, to correct their bad properties. Rhases, in like manner, recommends us to eat truffle boiled in water, with salt, marjoram, oil, and assafœtida. He also recommends wine, honied water, or the theriac after mushrooms. Apicius directs fungi to be eaten with pepper, oil, salt, &c. Horace points out the best kind of fungi. COMM.

> "Pratensibus optima fungis
> Natura est: aliis male creditur."
> (Sat. ii, 4.)

The poets make frequent mention of mushrooms as a delicacy at the tables of gourmands. See in particular Juvenal (Sat. v, 145.)

Apicius directs us to preserve truffles, by laying them in a vessel along with alternate layers of sawdust, and then covering up the mouth of the vessel with parget. On the mode of raising them, see 'Geopon.' (xii, 41.) In the days of Juvenal,

COMM. the Roman gourmands appear to have attached more importance to the truffles than the corn which they were supplied with from Africa:

"Tibi habe frumentum, Alledius inquit,
O Lybie; disjunge boves dum tubera mittas."
(Sat. v, 116.)

Ludovicus Nonnius confesses himself unable to determine what species of mushroom the amanitæ of our author were. Seth makes no distinction between them and the mycetæ. See further Athen. (Deip. ii, 7, ed. Schweig.)

SECT. LXXVIII.—ON THE FRUMENTACEOUS ARTICLES OF FOOD.

Of the frumentacea, the chondrus is nutritious, and forms viscid chyme; but a watery preparation is unwholesome, because, as it thickens quickly, it remains raw and unconcocted; but the juice of it is better when it is properly boiled whole, like a ptisan. The alica, in other respects, resembles the chondrus, only that it binds the bowels more. Wheat, when boiled and eaten, is of difficult digestion and flatulent; but if digested it proves a very strong food. When made into bread, its indigestible and flatulent properties are removed by the leaven and salt which are added. The most nutritious of all the kinds of bread is that made from siligo; next, that from the similago; and, third, that which is composed of the entire grain. Coarse bread is less nutritious, but more laxative than the other kinds. Starch gives little nourishment, like washed bread. Barley is of a cold nature and detergent: when boiled like a ptisan it humectates; but when toasted, as in polenta, it dries. Polenta in summer, drunk with water before the bath, quenches thirst. Barley-bread is dry and of little nourishment. The pudding (maza) is of more difficult digestion, and more flatulent than barley-bread, and when it receives a little honey is laxative. Oats are heating and of little nourishment. Millet and panic are cold and dry, contain little nourishment, and bind the bowels. But the millet is in every respect superior to the panic. Rice is of difficult digestion, contains little nourishment, and binds the bowels. A ptisan is prepared, by adding one part of it to fif-

teen parts of water, then mixing a moderate quantity of oil, and after it swells up, some vinegar. When properly boiled, a small quantity of salt is to be thrown in, and sometimes leeks or dill may be added. Oats and chondrus may be prepared in like manner as a ptisan.

COMMENTARY. On the cerealia consult in particular Theophrastus (H. P. iii); Dioscorides (ii); Galen (de Aliment. i); Pliny (H. N. xviii); Serapion (de Simpl.); and of the modern authorities see, in particular, Harduin (Notæ in Plin. l. c.); Paucton (Metrologie); Dickson (Husbandry of the Ancients); Sprengel (R. H. H. and Notæ in Diascor. l. c.); Ludovicus Nonnius (de Re Cibaria, i); and J. Bruyerinus Campegius (de Re Cibaria.) COMM.

Among the cerealia, wheat, as Galen states, deservedly holds the first place, being in most general use and containing the most nutriment within a small bulk. He remarks, that it is the most glutinous of all the articles of this class.

Haly Abbas likewise states that wheat is the most nutritious of all articles of food. Pliny asserts the same thing of it. He calls the siligo the *deliciæ tritici*. Galen explains the siligo and similago in much the same terms as our author. The third species, or the autopyrus, he says, consists of all the parts of the grain, the bran not being excluded. Actuarius, on the other hand, says that the bran only is rejected. Is not the text of the latter corrupt? Bran, Galen adds, is detergent, and contains little nourishment. Modern commentators have been greatly puzzled to determine what the *siligo, similago,* and *autopyrus* of the ancients were. It appears impossible to reconcile all the different descriptions of them given by ancient writers, and therefore we cannot but suspect that some of them must have written from an imperfect acquaintance with the subject. Upon the whole, we are inclined to think that we shall not be far from the truth if we set them down as varieties of flour or bread, as regards quality, corresponding in a great measure, to the kinds of bread now distinguished by the names of the white, the wheaten, and the household. At all events the *autopyrus* is certainly analogous to the last. The furfuraceus, or panis cibarius of Celsus, was made solely from bran.

Theophrastus mentions that the lightest wheat imported to

COMM. Greece in his time was the Pontic. It is curious to remark that Odessa wheat still retains its ancient character. The heaviest, he says, was the Sicilian, which, however, was lighter than the Bœotian. Pliny says that the lightest wheat brought to the Roman market was the Gallic, and then that imported from the Chersonese. The first in excellence, he adds, are the Bœotian, the Sicilian, and next to these the African.

Galen gives an interesting account of bread. The best kinds, he says, are such as contain plenty of leaven, have been properly pounded, and exposed to a moderate heat in the oven. When exposed to too strong a heat, he properly remarks that a crust is burned on the outside, while the inside is left raw or improperly concocted. Unleavened bread he wholly condemns. Celsus appears to have had a better opinion of it, for he ranks it first among those substances which do not spoil on the stomach. Of bread, in general, he correctly remarks, " Siquidem plus alimenti est in pane quam in ullo alio." Pliny and Galen describe a soft spongy kind of bread, which would seem to have resembled that which we call buns. Pliny adds, that some nations prepare their bread with butter. He mentions a kind of bread called *artolagani*, which, according to Dr. Arbuthnot, answered to our cakes. Seth gives an interesting account of bread, but it is mostly extracted from Galen. Haly Abbas says, that the best kind of bread is that which is made from wheaten flour and salt, and is fermented, and heated in an oven to such a degree as not to burn the outer crust. Rhases disapproves entirely of unleavened bread. Serapion states that old bread is astringent. Avenzoar prefers newly-made bread, provided it has been cooled. Hippocrates condemns the eating of bread before it has been properly cooled. (De Diæt. i.) He mentions only two kinds of bread, the fine and the coarse—*autopyrus*. (De Vet. Med. 14.) According to Actuarius, the lightest kinds of wheat form the best bread for indolent persons, but persons actively employed require the weightiest kinds. Unleavened bread, he says, is very indigestible. Bread prepared with oil, he adds, is very nutritious, but requires a strong stomach to digest it. See an interesting account of the various kinds of bread in Athenæus (Deipnos. ii, 26.) He makes the remark that the worst kind is the most laxative. Among the kinds of bread described by ancient authors may be noticed

the *oxylipus* mentioned by Galen (Meth. Med. viii, 5), which, as Manardus remarks, was prepared with vinegar. Another kind, called νάστος, was fermented with honey, dried grapes, &c. See Tzetzes (ad Lycoph. Casan. 640.) It is to be borne in mind that the ancients generally used *leaven* to ferment their bread. Pliny, however, mentions that the Gauls and Spaniards were in the practice of using *yeast*. (H. N. xviii, 7.) COMM.

The zea, typha, and olyra of the Greeks, and the far and adoreum of the Romans, were all varieties of spelt, a species of grain bearing some resemblance to wheat; in short, it was the *triticum spelta* L. Actuarius calls it a light, and not very nutritious grain. The chondrus was prepared from spelt, by first separating the husks, and then breaking it down into granules. The alica was the same as the chondrus, with only the addition of a small quantity of chalk; and, indeed, almost all the writers on Dietetics, except our author, use them as synonymous terms. A more complicated method of preparing them is described by Pliny, and in the 'Geoponics' (iii, 7) Sprengel says that chondrus is what is called *perlgraupen* by the Germans. It was therefore nearly the same as the pearl-barley of this country, only that it was prepared from the grain called spelt, *triticum spelta*, and not from common barley. Galen, like our author, explains that a gruel, or decoction from it, is unwholesome, as it thickens before it is properly concocted.

Starch, according to Galen and Oribasius, is lubricant, and not calefacient like bread. They say that it is not very nutritious. Serapion gives the same account of it.

Galen, Rhases, Haly Abbas, and, in fact, all the authorities, agree that barley is of a colder nature, and less nutritious than wheat. Polenta was prepared by first steeping the grain in water, and afterwards drying it at the fire, and grinding it down to meal. It was therefore a sort of malt. Galen, like our author, remarks that barley-meal sprinkled on wine and water, or water alone, makes an excellent beverage. Actuarius recommends barley-water as a diluent drink in fevers. Ptisan of barley was thus prepared: Barley was boiled until it swelled; it was then dried in the sun, and afterwards pounded and freed of its husk, and again pounded but not ground. This flour was boiled with fifteen parts of water, to which a small quantity of

COMM. oil, and, when it swelled, some vinegar were added. Salt also was often added to it. It was either used as thus prepared, or it was strained, when it got the name of the juice of ptisan. (Hippocrates de Regim. in acut.; see Galen's treatise de Ptisana.) A long-lived race of people in Chaldea are said to have subsisted principally upon barley-bread. See Lucian (Macrobii). Galen states that it is very deficient in nutritive properties. (De Re Alim. i, 10.) According to Athenæus barley-bread was among the worst kinds of it.

Galen says of oats that they are the food of horses and not of men. Aëtius and Simeon Seth call them refrigerant.

Galen, Dioscorides, Simeon Seth, and Serapion agree that rice is astringent, and recommend it for ulcers of the intestines. Galen reckons the bread prepared from it next in quality to that from wheat. Simeon Seth calls it nutritious. Celsus ranks it with things of a weak nature.

Galen and Serapion say that millet and panic being devoid of oily matter are desiccative, and therefore useful in defluxions of the belly. Simeon Seth says that the millet is of difficult digestion, and not nutritious. Rhases directs panic to be eaten with fresh milk, butter, and sugar. Pliny mentions a sweet species of bread prepared from millet. Galen says that it is not possessed of much nourishment. He says it was only used for bread in times of scarcity. The panic was merely a variety of the millet, i. e. of the *panicum Italicum*. It was looked upon as inferior to the common millet.

The maza, as Zeunius explains it, consisted of the flour of toasted barley pounded with some liquor, such as water, oil, milk, oxycrate, oxymel, or honied water. Galen calls it flatulent and unwholesome food. Hesiod recommends the maza, or cake prepared with milk, as an article of food during the heat of the dog-days. (Opera et Dies, 588.) In the *Prytoneum* or House of Refuge, at Athens, persons were fed on it. (Athen. Deipnos. iv.)

The bellaria, called also placentæ, liba, and crustulæ, by the Romans, and by the Greeks πέμματα, ἴτρια, and πλάκουντες, were cakes of various kinds, prepared with flour, water, oil, honey, and sometimes fruits. See Athenæus (Deipnos. xiv.) They were served up towards the conclusion of a banquet, as appears evident from Matron's Parody, (in Athenæus iv. 5.)

The *obelius panis,* mentioned by him in the 3d book, is supposed by Ludovicus Nonnius to have been a species of pastry. According to Schweighäuser the French *oublie* is derived from it. (Ad Athen. iii, 76.) Comm.

The *bucellatum,* mentioned by Ammianus Marcellinus and Ælius Spartianus, was a species of bread used by the Roman soldiers, and appears to have resembled our ship-biscuit. (See Not. Gronovii, in Amm. Marcell. xvii, 8.) This kind of bread was called δίπυρος by the Greeks (see Hesychius), that is to say, *bis coctus,* and hence the English biscuit.

SECT. LXXIX.—ON PULSE.

Of pulse, the lentil forms a bad chyme and melancholic humours; but especially it, when twice boiled, binds the bowels; yet its soup, when drunk with oil and sauce, is rather laxative. But savory or pennyroyal ought to be added to it because it is flatulent. The common bean is light, flatulent, and detergent; but the Egyptian bean is much more succulent and excrementitious than ours. The pea is spongy, but not so flatulent. The chick-peas are flatulent and detergent, promote the formation of semen, are aphrodisiacal, and lithontriptic; when toasted, they part with their flatulence, but are of difficult digestion. Lupines are difficult to digest and evacuate, and produce a crude chyme. The fenugreek warms and loosens the bowels when taken before a meal. Tares and fasels, having been previously macerated in water so as to shoot out roots, are laxative of the bowels when taken before a meal with sauce; and are more nutritious than the fenugreek. But the fasels called *dolichi,* when eaten green with their husks, are more excrementitious.

Commentary. Hippocrates, Rhases, and other of the ancient authors agree, that pulse, in general, are nutritious. All held that they are flatulent, excrementitious, and aphrodisiacal. According to Plutarch it was on account of their aphrodisiacal qualities that the Egyptian priests forbade the use of them. Some assign this as the reason why Pythagoras "ventri indulsit non omne legumen." Apollonius Dyscolus says that he did so because they are flatulent, difficult to digest, and Comm.

COMM. occasion disturbed dreams. (Hist. Mirab. 46.) This seems the most likely reason; but Plutarch, Iamblichus, and Porphyry think they see more recondite meanings in the Pythagorean interdiction. Actuarius remarks that all kinds of pulse are to be eaten in their green juicy state. In an ancient proverb, preserved by Athenæus, it is said that "figs are to be eaten after fish, and pulse after flesh."

Galen speaks of lentils in much the same terms as Paulus. He particularly disapproves of the practice, which he says was common in his time, of eating them with sodden wine. Rhases says that they are of a cold, desiccative, and excrementitious nature. Actuarius calls them the worst of the legumina. Athenæus mentions that the Egyptians lived much upon lentils. (iv.) Martial, in like manner, speaks of them as an Egyptian food.

All the commentators are puzzled to determine what the ancient faba was. We are inclined to think, with Dickson, that Theophrastus's description of it applies best to our small bean. The Egyptian bean, according to Sprengel, was the *nelumbium speciosum*. Galen mentions that beans were much used by the gladiators, for giving them flesh, but adds that it was not firm or compact. Actuarius states that they are nutritious, but dissuades from using them freely, because of their flatulence. According to Celsus, both beans and lentils are stronger food than peas. Seth agrees with Galen, that the flesh formed from them is flabby and soft. Galen directs beans to be fried or boiled with onions, whereby they will be rendered less flatulent. (De Alim. Facult. i.)

It is probable that the faseolus was the kidney-bean, or *phaseolus communis* L. Harduin calls it *feverole* in French. Rhases says that fasels are flatulent, and fatten the body. Pliny remarks that they are eaten with their husks. He alludes, we suppose, to the variety of them called Dolichi. Galen says that they are more laxative and nutritious, but not so flatulent as peas. Oribasius says that they hold an intermediate place between those substances which give much and those which afford little nourishment. Actuarius says they are the worst kind of beans, and that being heating and excrementitious they are apt to disorder the bowels. Tares, as Galen and Oribasius mention, were sometimes used for food during a famine.

All the authorities give peas much the same characters as

Paulus does. Galen mentions the method of steeping chiches in water, and getting them to germinate before using them for food. Are the *bons vivans* of the present day acquainted with this method of making peas tender and soft? The ancients were also in the practice of preparing these seeds for sowing in much the same manner. (Geopon. ii, 36.) See also Pliny (xviii, 13.) We are inclined to think that Virgil alludes to this practice (Georg. i, 193); but Dr. Hunter has put a different interpretation on this passage. The species of pea which grows plentifully in Sicily, and is called *pisum ochrys*, is said to hold a middle place as to quality. COMM.

Rhases remarks that lupines, being bitter, are not properly articles of food, but medicines. They possess, he adds, little nutriment. Galen says that they are indigestible, and therefore apt to engender crude humours. When eaten, he directs them to be well sweetened.

Galen mentions that some took fenugreek, with fish-sauce, to open the belly. He says it may be eaten with vinegar, wine, fish-sauce, or oil. Some, he adds, use them as a condiment to bread. Rhases gives similar directions for using fenugreek.

Galen likewise makes mention of the lathyrus and aracus, two varieties of the chichling vetch. He says they resemble in properties the fasels. The common vetch was scarcely an article of food.

The sesame, that is to say, the *sesamum orientale*, or oily grain, as Galen remarks, is of an oily nature, and consequently heavy on the stomach.

Galen speaks of linseed as having been used for food by peasants in Asia, but adds, that it is not eaten by more refined persons.

SECT. LXXX.—ON THE SUMMER FRUITS.

The gourd is of a cold and humid nature, loosens the bowels, and gives little nourishment. The pompion is altogether a fruit of bad juices, cold, humid and emetic; and, when not properly digested, it occasions cholera. The seed of it is diuretic, breaks down stones in the kidneys, and is altogether very detergent. The squash has all the properties of the pompion in an inferior

degree. The cucumber is of a less cold and humid nature than the pompion, but is more diuretic; it is difficult to digest, and its chyme is bad even when digested. Upon the whole, all this class of fruits are of a cold and humid nature, supply little nourishment, and that of a bad quality.

COMM. COMMENTARY. Galen explains that the Fructus Horæi are those fruits which grow up about the middle of the dog-days. He says that they all contain unwholesome juices, which, if they spoil in the bowels, are apt to become deleterious poisons. Mnesitheus says that all these fruits supply little nourishment, but that what they give is of a humid nature, and does not disagree with the body. (Athenæus, ii.)

The gourd (κολοκύνθη), according to Galen, is the most innocent of this class of fruits; and yet, when it spoils in the stomach, it engenders bad juices. Diphilus, as quoted by Athenæus, says of it that it supplies little nourishment, is apt to spoil, dilutes the system, is readily discharged, contains good juices, and is more savoury when taken with water and vinegar, but more wholesome when pickled. Apicus gives many receipts for cooking gourds. By one of these we are directed to eat them boiled, with pickle, oil, and wine. Most of the other receipts contain a liberal allowance of spices and aromatics. Simeon Seth calls them digestible and wholesome, but not nutritious.

The pompion (πέπων), according to Galen, is juicy, detergent, diuretic, and laxative. Seth recommends persons of a pituitous habit of body to drink old wine with it, but such as are bilious to eat acid food. He remarks that it is apt to excite nausea. Actuarius says that, when digested, pompions form a thin watery blood. Apicius directs us to eat them and melons with pepper, pennyroyal, honey, or raisin wine, pickle, and vinegar; to which assafœtida may be added. Hippocrates calls them laxative and diuretic, but flatulent.

Galen says of the melopepon, or squash, that its juices are not so unwholesome, nor so diuretic, nor so laxative, as those of the pompion. He adds that, although far from delicious, it is not so nauseous as the pompion. On the melopepon, see Harduin's notes on Pliny (H. N. xviii, 5.) Perhaps some of the authorities may have meant the melon by the melopepon.

Galen says that some persons, from idiosyncrasy, readily digest the cucumber (σίκυος); but he insists that it is impossible that good blood can be formed from it, and therefore he warns against the frequent use of all such fruits. Actuarius says that it forms a crude chyme, and is of a cold, humid, and indigestible nature. Celsus says that its nutritive powers are feeble. Avicenna says that its juices are bad, and prone to putrefaction. COMM.

Melons are said by Averrhoes to be of a cold nature, juicy, detergent, and diuretic.

Owing to the lax signification in which the names of the summer fruits are often applied by the Greek and Roman writers, we have felt considerable difficulty in distinguishing the articles treated of in this chapter. This confusion is of very ancient date, for one of the *Deipnosophists* of Athenæus complains of the difficulty he found in comprehending the proper application of these terms, from their having been differently used by the authors who had treated of them. (ix, 14.) We have been obliged for once to abandon the guidance of Sprengel, but have done so with the greatest hesitation, and not until we had compared the descriptions of all the Greek, Latin, and Arabian authorities. Schneider points out the confusion about the use of these terms, but does not sufficiently clear it up in his Index to Theophrastus. Ludovicus Nonnius may likewise be consulted with advantage. He supposes that the pepones of the ancients were our melons; and he is also inclined to believe that the melopepon was a species of the same. (De Re Cibaria, i, 16.) For want of a better term, we have ventured to translate it the squash, although we are uncertain whether the Greeks were acquainted with this fruit, now so common in the East and in America.

SECT. LXXXI.—ON THE FRUIT OF TREES.

The fig and the grape hold the principal place among the autumnal fruits; for their juices are of a less bad quality, and they are more nutritious than the others.—Of these, the figs have the better juices and the more nutritious; they are laxative, diuretic, and evacuate the kidneys, and particularly the very ripe. In like manner also the dried; but they are flatu-

lent, and form blood which is not good; wherefore, when liberally used, they engender lice. When grapes are not evacuated, neither are they digested, but form a crude chyme; but if evacuated their effects are more moderate. Dried grapes are warmer than the others, more stomachic, and more nutritious, but not so laxative. The mulberry is of a moistening nature, cools moderately, and loosens the belly when taken first, neither does it disagree with the stomach, but is little nutritious.—Of cherries, the sweeter kinds loosen the belly, but are bad for the stomach; those which possess astringency are not so bad for the stomach, but do not evacuate the belly. The same rule will apply to the grape, the mulberry, and many other fruits; for astringents in general, when eaten or drunk at the beginning before any other food, bind the belly; but they who have their bowels constipated from atony, and have taken beforehand some articles of food of a laxative nature, such as pot-herbs, fishes, or the like, will find that astringents taken afterwards will, by strengthening the bowels, evacuate downwards. The fruit of the pine called strobilus has good juices and thick, is nutritions, but not of easy digestion. The juices of the peach are of a bad quality, turn acid, and soon spoil; and, therefore, ought to be taken first, that they may readily pass downwards, and not spoil by remaining in the belly. The fruits called apricots are superior to the peaches, for they neither turn acid nor spoil so soon, and they are sweet. Of apples, the sweet are more heating, and easier assimilated than the others, especially when roasted or boiled; the acid are colder and more calculated to cut the humours in the stomach; the austere strengthen the stomach and bind the belly, more especially quinces. Of pears, the large and ripe are more nutritious than these; but the pomegranates are cooling, and contain little nourishment. The medlars and services are more astringent and fitted for a loose belly. Dates are stomachic, unless very fatty they bind the belly, form thick and viscid chyme, and occasion headachs. Of olives, the over-ripe (*drupæ*) injure the stomach, and form a fatty chyme; those that are pickled and hung (*halmades et colymbades*), when eaten beforehand, whet the appetite, and loosen the belly, more especially if prepared with vinegar, or vinegar and honey. Of nuts, those called royal (walnuts) are less nutritious than the filbert, and more stomachic. The green walnuts are more juicy and laxa-

tive; and, if you will strip off the inner membrane of dried ones which have been macerated in water, they will become like the green. Almonds have incisive and attenuating powers, and, therefore, they evacuate the intestines and chest, and more especially such as are bitter; and, in like manner, the pistacs, which are also more calculated for removing obstructions of the liver. Damascenes loosen the belly when eaten before food, either raw or boiled in honied water. The jujubes are of difficult digestion, injurious to the stomach, and give little nourishment. Carobs are of difficult digestion, bind the belly, and produce bad chyme. Sycamores are decidedly of a cooling and a moistening nature. Of the citron, the outer part is acrid and indigestible, but that part which is as it were its flesh, is nutritious, and yet it is hard to digest. The inner part, whether acid or watery, is moderately cooling. Acorns are nutritious, no less so than corn, but of difficult digestion, contain thick juices, and are slowly evacuated. Chesnuts are in every respect superior to them.

COMMENTARY. It may be proper, in the first place, to discuss briefly the question respecting the proper time for eating fruit. Galen, Rhases, and Simon Seth direct to eat fruit at the beginning of a regular meal. It appears, however, to have been customary with the ancients, as it is in Britain at the present day, to eat all manner of fruits at the *mensa secunda*, or dessert, as we learn from many passages of Athenæus and Macrobius. Horace was fond of concluding his banquets with fruit. He speaks of finishing a frugal repast with hung grapes, nuts, and figs (Sat. ii, 2); and in another place he says: COMM.

> "Ille salubres
> Æstates peraget, qui nigris prandia moris
> Finiet ante gravem quæ legerit arbore solem."
>
> (Sat. ii, 4.)

We may mention, by the way, that Galen, on the other hand, positively forbids to eat mulberries after other food, and that it appears to have been the general rule in ages long after the time of Galen to eat figs and grapes at the beginning of a meal. (Anonym. de Diæta, ed. Ideler, t. ii, 198.) But what Celsus says respecting the proper time for eating fruit is very much to the purpose: "Secunda mensa bono stomacho nihil nocet, in imbecillo coas-

COMM. cescit. Si quis itaque hoc parum valet, palmulas pomaque et similia primo cibo assumit." (i, 2.) Ludovicus Nonnius, a great modern authority in dietetics, recommends us to eat the summer fruits, and cherries, strawberries, plums, peaches, and the like, at the beginning; but apples, pears, nuts, chesnuts, and the like, at the conclusion of a meal; that is to say, at the dessert.

The fig was a great favorite with the ancients. Galen states that it is decidedly nutritious, but that the flesh formed from it is not firm and compact, like that from pork and bread, but soft and spongy, like that from beans. He says that figs increase the urinary and alvine discharges. Averrhoes says that they are of a hot and humid temperament, and that they loosen the belly and strengthen the stomach. See, in particular, Athenæus (Deipnos. iii); Macrobius (Satur. iii, 20); and Haly Abbas. Haly says that the fig is the most digestible, nutritious, and wholesome fruit of this class. Galen speaks doubtfully of dried figs.

Pliny devotes a whole book to the consideration of the grape and its productions. Galen says that, like figs, grapes are nutritious, but that the flesh formed from them is deficient in firmness and durability. He remarks that their stones pass through the bowels wholly unchanged. Simeon Seth states that the grape consists of four different substances, namely, the membrane which surrounds it, the fleshy part, the juice, and the stones. Of these, he says, the outer coat and the stones ought to be rejected, because they are indigestible. Plutarch and Macrobius exert their ingenuity to explain how it happens that must, or the fresh juice of the grape, does not intoxicate like wine. The "pensilis uva," or hung grape, is mentioned by Horace as an article of the dessert. (ii, 2.)

Galen gives mulberries the same character as our author does. Aëtius says that the proper occasion for them is when the stomach is hot and dry. According to Athenæus, the Siphnian Diphilus said that they possess moderately wholesome juices, and that they afford little nourishment, but are savoury, and of easy evacuation. Haly Abbas recommends them cooled in snow for heat of the stomach.

According to Pliny, cherries were first imported to Italy from Pontus, by the famous Lucullus, and in his (Pliny's) time they had become naturalized even in Britain. This story, however,

is not very probable, as they had been described more than a century before by Theophrastus; and further, Athenæus mentions that they had been noticed long before Lucullus by the Siphnian Diphilus. He speaks favorably of them as an article of food. Servius, the commentator on Virgil, states that there were wild cherries in Italy before the days of Lucullus. Simeon Seth says that they are of a cold and humid nature, and open the bowels. They are useful, he adds, when the stomach and constitution are hot and dry. COMM.

Galen states that the fruit of the pine contains thick and wholesome juices, but that they are not easily digested. The Siphnian Diphilus, as quoted by Athenæus, says that the strobili are very nutritious, smooth asperities of the trachea, and purge the breast. Mnesitheus, as quoted by the same author, says that they fatten the body, and do not impair the digestion. (Deipnos. ii.) Celsus holds them to be stomachic.

Our author's remarks on the persica are taken from Galen. Seth calls them rhodacina, a term which is generally applied to them by the Byzantine writers, and also by Alexander Trallian. Seth says that they are cooling, diluent, and laxative, but difficult to digest. If not the same as the modern peach (which the commentators suspect), the persica was evidently a fruit nearly allied to it.

It is highly probable, but not quite certain, that the præcocia, duracina, and armeniaca, were varieties of the apricot. Galen does not use the second of these terms, and mentions, that many held the first and the last to be exactly the same fruit; and he, himself, in another place, forgets the distinction which he had endeavoured to establish between them. Simeon Seth describes them by the name of *βερίκοκκα*, which appears to be a corruption of the Latin præcocia. See Geopon. (x, 73, and the note of Needham); Harduin (Notes on Pliny); J. Bruyer (de Re Cibaria, xi, 13); C. Avantius (Notæ in Cœnam); Baptist. (Fier. p. 6); Ludovicus Nonnius; and Sprengel (Dioscor. i, 165.) Seth says that they are fruits which soon spoil, and form bad blood.

Mala was used by the ancients as a generic term, comprehending many species of fruit. See an interesting account of them in Pliny (xxiii, 5); Macrobius (Saturn. iii, 19); and Athenæus (Deipnos. iii), where Diphilus thus states their

COMM. general characters as articles of food: "Green and unripe apples are unwholesome and unsavoury, swim in the stomach, form bile, and occasion diseases. Of the ripe, such as are sweet are more wholesome and more laxative from having no astringency; the acid are more unwholesome and constipating, but such as have also a certain degree of sweetness become more delicious, and are at the same time stomachic from having some astringency." The ancients appear to have been well acquainted with the methods of making cider, perry, and the like. See Macrobius (Sat. vii, 6), and Pliny (H. N. xiv, 19.) The Arabian authors in general speak rather unfavorably of apples.

Cornels, or the fruit of the *cornus mascula*, were in little request as articles of food, and yet Pliny mentions that they were sought after in his time.

The cydonia or quinces were in great repute, not only as articles of food, but as medicines. When unripe they are very astringent and contain much acid, and hence they were used in such cases as those in which the mineral acids are now generally administered. (Pliny, H. N. xxxiii, 6.) They appear to be the "cana mala" of Virgil. Columella and Pliny describe three varieties, namely, the chrysomala, struthea, and mustea. These have not been satisfactorily determined. Some modern commentators have taken "the golden apples" of Theocritus and Virgil for oranges, but it is much more probable that they were a species of quince. No ancient author has noticed the orange.

Pears, according to Simeon Seth, are of a cold and desiccative nature. They are compounded, he says, of astringency, sweetness, and sometimes of acidity; and some have a moderate degree of heating and desiccative properties. Averrhoes gives exactly the same account of them. Of pomegranates, he says, that some are sweet and some are acid; that all of them moisten, but that the sweet are of a more hot and humid nature. Homer enumerates the pomegranate among the fruits which were suspended over the head of Tantalus to tempt his appetite. (Odyss. xi, 588.) We may suppose, therefore, that the poet held it to be a most delicious fruit. Dioscorides says that the sweet pomegranates are stomachic; but that they are prejudicial when there is fever.

Galen, who gives medlars and services much the same cha-

racters as our author, recommends them only in very small quantities. Aëtius and Seth say that ripe medlars are somewhat heating, but that the unripe are cold, astringent, and constipating. Actuarius calls them excellent astringent medicines, but bad articles of food. Dioscorides describes two species of medlars, the aronia, and setanium. The first species is called azarollo by the Italians, and the other is the common species of medlar. Comm.

See an interesting account of dates, or the fruit of the palm-tree, in the 'Hierobotanicon' of Olaus Celsius. The date, according to Galen, is a fruit possessing a variety of characters, but having always a certain degree of sweetness and astringency. He says, it is indigestible and apt to occasion headachs. Simeon Seth says that dates form an impure blood; and Ruffus, as quoted by him, affirms that they prove injurious to the bladder. Serapion, Rhases, and Mesue agree that the date is a cold, astringent fruit. Herodotus, Xenophon, and Athenæus make mention of a wine prepared from dates. Erotian says that a species of bread is made from dates, flour, and water. (Lexicon Hippocratis.)

The olive, as Pliny remarks, consists of four parts, the kernel, the oil, the flesh, and the lees. The drupæ, mentioned by our author, were the olives quite ripe and ready to fall from the tree. The colymbades and halmades were olives pickled with salt, &c. See Harduin (ad Plin. H. N. xv, 3.) The Siphnian Diphilus, as quoted by Athenæus, says of them that they supply little nourishment, occasion headachs; that the black injure the stomach, and bring on heaviness of the head; and that the pickled prove more stomachic and astringent of the belly, Galen mentions that olives were often eaten with bread before dinner in order to open the belly. Simeon Seth says that ripe olives are moderately hot, but that the unripe are cold, desiccative, and astringent. Serapion, in like manner, says that unripe olives are astringent. Plutarch mentions a pickled olive as a whetter of the appetite. (Sym. vi.) The ancients marked strongly their estimation of the olive when they set it down as being the emblem of peace, and sacred to the Goddess of Wisdom.

The Siphnian Diphilus, as quoted by Athenæus, states that walnuts occasion headach, and swim on the stomach; but such

COMM. as are tender and white contain better juices, and are more wholesome; and that such as have been toasted in a furnace afford little nourishment. (Deipnos. ii.) It appears, from Macrobius, whose account of them is very interesting, that they were eaten at the dessert. He states decidedly that the royal nut of the Greeks was the juglans or walnut. (Sat. iii, 18.) Simeon Seth says that, when taken before other food, they are apt to prove laxative or emetic. Averrhoes says the like of them. He adds that filberts are not so apt to produce this effect. According to Rhases, they are apt to prove injurious to the stomach and liver.

The Siphnian Diphilus says that almonds are attenuant, diuretic, purgative, and afford little nourishment; that the green contain bad juices, and are possessed of stronger medicinal properties; but that the dried are more flatulent, and apter to swim on the stomach. He adds that such as are tender, full, and are whitened, contain milky juices which are more wholesome. Simeon Seth says that bitter almonds are hotter, more attenuant, and more incisive than the ripe. He adds that filberts are the most nutritious of the nuts but difficult to digest.

The pistachio nut has been long very celebrated in the East and in Sicily. See Celsus (Hierobotanicon), and Brydone (Tour through Sicily.) Galen says that it possesses a certain degree of bitterness and astringency, and that it proves useful in obstructions of the liver, but that it affords little nourishment. He adds that it is neither beneficial nor injurious to the stomach. Simeon Seth remarks that the moderns looked upon pistacs as stomachic. Averrhoes speaks highly of them. Rhases says they are of a hotter nature than almonds. Avicenna also says of them that they are of a heating nature. Theophrastus describes the pistachio tree as a species of turpentine, and it is now acknowledged as such.

Galen states that the best damascenes are such as are large, spongy, and astringent. He adds that taken with sweet wine they tend to open the bowels. Oribasius says that they afford little nourishment, but may be useful for moistening and cooling the stomach. Martial calls them laxative. It appears certain from Isidorus, that the coccymela and myxæ were the same as the pruna or plums. The principal variety is the *prunus insiticia*, or bullace plum.

Galen says of jujubes, that they suit best with the intemperaments of women and children; but that they give little nourishment. Haly Abbas states that they are cold and humid, of slow digestion, and apt to form phlegm. They are the *serica* of Galen, who, however, also applies the other term (*zizypha*) to them. (De Alim. ii, 38.) COMM.

Abu'l-fadli, as quoted by Olaus Celsius, says of the siliquæ or carobs, that they are sweet astringent fruit. Horace speaks of them as being an inferior kind of fruit. "Vivit siliquis et pane secundo." (Ep. ii, 1.) And so, also, Juvenal (Sat. xi, 59), and Persius (iii, 55.) Galen says of them that they are woody and consequently indigestible. Aëtius says that they are of a dry and very desiccative nature, but possess some sweetness. Pliny mentions that a sort of wine was prepared from carobs.

Galen says that the sycamores hold an intermediate place between mulberries and figs. He says, further, that they are sweetish, and of a diluent and cooling nature. Dioscorides and Serapion speak unfavorably of them as being articles of food which are only used in times of famine.

The citron, or "felix malum" of Virgil (Georg. ii, 126), was greatly esteemed by the ancients. Galen calls it fragrant, aromatic, and pleasant to the taste as well as the smell. From Theophrastus downwards, it is much celebrated as an antidote to poisons. See some curious information respecting it in Athenæus (Deipnos. iii), and Macrobius (Sat. iii, 19.) Simeon Seth says that if taken in moderation it is beneficial to the stomach, but that in large quantity it proves indigestible. Serapion recommends after eating citrons to take of anise, mastich, and wine. No Greek or Latin author has noticed the lemon. Avicenna, we believe, is the first author who mentions it.

Galen says, in general, of the wild kinds of fruit, that they supply little nourishment, and that they are injurious to the stomach. The acorns, he says further, are the best of this class, being no less nutritious than the cerealia; he adds, that in ancient times men lived upon acorns; and that the Arcadians continued this practice after the cerealia were used in all the other parts of Greece. Simeon Seth says that, although nutritious, they are difficult to digest and form crude humours: and hence he recommends to abstain from them. It is well ascertained that

COMM. it was the acorns of the *quercus ilex* which the ancients used for food.

Galen's opinion of chesnuts agrees with the account given by our author of them. Simeon Seth says that they are very nutritious, but are hard to digest and evacuate from the body; and that they are flatulent and astringent. Haly Abbas describes them as a proper article of food. At the present day, whole nations of mankind live upon chesnuts. The opinion of Mnisitheus regarding them, as quoted by Athenæus, appears to be very judicious; he says they are difficult to digest and flatulent, but sufficiently nutritious if digested.

The strawberries, or fraga, are mentioned by Virgil (Ec. iii), and Ovid (Metam. i); but they are wholly unnoticed by the Greek writers.

We consider ourselves here called upon not to pass over unnoticed the fruit of the lotus tree, which is so celebrated in ancient poetry, and is also mentioned by the historians and writers on science. It is now well ascertained that the lotus-bread is produced by various trees in the country surrounding the great desert of Africa. The most celebrated of these trees, or rather shrubs, is the *celtis australis*. Rennel and Park agree that its fruit is very wholesome. On the lotus, see further, Eustathius (in Odyss. p. 337, ed. Rom.); Dionys. (Geograph.); Schweigh (ad Athen. Deipnos. xiv, 65.)

SECT. LXXXII.—ON ANIMALS; AND, FIRST, OF FOWLS.

The nourishment derived from fowls is less than that from beasts, and more especially swine, but they are of easier digestion, particularly the partridge, godwit, pigeon, hen, and pheasant. That from thrushes, blackbirds, and small sparrows (among which are those called *pyrgitæ*) is harder; and still more so the turtle, wood-pigeon, and duck. But the peacock is still more indigestible, harder, and more stringy. The flesh of geese and ostriches is excrementitious, and more indigestible than any of the afore-mentioned; except their wings, which are not less wholesome than the same parts in other animals. The flesh of the crane is stringy and hard. In general, the young are more juicy, digestible, and nutritious than the aged, and are more

readily evacuated by the belly. The boiled are superior to the roasted and fricasseed; and those that live on dry and mountainous places are more digestible and less excrementitious than those which live in marshy places.

COMMENTARY. Hippocrates states that fowls in general are drier than quadrupeds. The driest, he adds, are, first, the wood-pigeon, then the common pigeon, and, thirdly, the partridge, cock, and turtle. The most humid or juicy, he says, are geese. Those which live on seeds are drier than the others. The flesh of ducks, and of all fowls which live in marshes, or in water, is of a more humid nature. (De Diæta, ii, 17.) In another place, he calls the flesh of fowls one of the lightest kinds of food. (De Affect. 46.) COMM.

Their general characters are thus stated by Celsus: "Ex iis avibus, quæ in media specie sunt, valentiores eæ, quæ pedibus, quam quæ volatu magis nituntur: et ex iis, quæ volatu fidunt, firmiores quæ grandiores aves, quam quæ minutæ sunt; ut ficedula et turdus. Atque eæ quoque quæ in aqua degunt *leviorem* cibum præstant, quam quæ natandi scientiam non habent." The character here given of water fowls has drawn upon the author the animadversions of Dr. Cullen. But rather than suspect Celsus of such a mistake, we are inclined to believe that the text must be corrupt, and that we ought to read *leniorem* instead of *leviorem*. We are confirmed in this conjecture from all the other authorities, as for example, Hippocrates, Galen, Aëtius, Rhases, and Haly Abbas, having stated that the flesh of water fowls is more excrementitious than that of land fowls.

Our author takes his account of fowls from Galen, or perhaps direct from Oribasius. Actuarius states that fowls are much lighter, but not so nutritious as quadrupeds; that they are drier, more fibrous, and form thinner blood; and that water fowls are the more juicy and fleshy.

Having thus stated the general characters of fowls as articles of food, we shall now briefly notice a few of those which were in most esteem with the *bons vivans* of antiquity.

The partridge was accounted a rare delicacy at the tables of luxurious Romans. See Martial (xiii, 65.) Simeon Seth says that it is easily digested, but ought not to be eaten the day it is killed. According to Rhases, it contains thick juices, is astrin-

COMM. gent, but very nutritious. Psellus calls it savoury, nutritious, and digestible. Apicius directs it to be dressed with pepper, lovage, mint, the seed of rue, pickle, wine, and oil. As at the present day it was eaten at the dessert. (Deip. xiv, 73.) Athenæus describes distinctly two species of the partridge, which seem clearly referrible to the *tetrao perdix* and *tetrao rufus*. The latter, or red-legged partridge, is still the common species in Italy.

Galen ranks the pigeon next to the partridge in excellence. The Arabians, however, and, in imitation of them, Simeon Seth, calls the flesh of the pigeon heating and excrementitious.

The attagen Ionicus has been celebrated by the muses of Horace and Martial. Porphyron, one of the ancient commentators on Horace, calls it "avis Asiatica inter noblissimas habita." Harduin, who is deservedly reckoned a high authority in these matters, supposes it to have been the *gelinotte du bois*, or wood-hen. Altogether we incline to the opinion that it was the *scolopax ægocephala*, or godwit, a water-bird still much esteemed by the epicures of the East. We further think that the *scolopax rasticula*, or woodcock, is the *scolopax* of the ancients. It is well described by the poet Nemesitanius. Athenæus quotes Aristophanes as calling the attagen a most delicious bird. Galen, Aëtius, and Oribasius speak of it in the same terms as Paulus. Apicus directs us to dress it like the partridge.

Galen says of the starling that its flesh is allied to that of the attagen. (Diæta. iv.) It is also mentioned as an article of food by Athenæus. (ii, 24.)

Persius speaks of the thrush as being a much-esteemed delicacy. (Sat. vi.) Horace also says that there is nothing better than a fat thrush. (Epist. i, 15.) See Aristoph. (Nubes); Athenæus (Deipn. ii.) It is worthy of remark that, although the thrush be by no means a delicate morsel in the north of Europe, it is very delicious in Italy and Spain. It feeds on juniper berries, grapes, and the like. The receipts of Apicius for dressing thrushes, and other small birds, contain spices, aromatics, honey, wine, pickle, and oil. Averrhoes says that their flesh is drier, more aromatic, but grosser than that of pigeons. The Romans bestowed great pains upon feeding thrushes, as we can learn from Varro and Columella. The species commonly used by them for food was the fieldfare, or *turdus*

pilaris. They also ate blackbirds. Galen speaks favorably of sparrows. Other small birds, as the lark and the siskin (*spinus*), are noticed by Athenæus as being sometimes eaten. Galen recommends the lark in colic affections. In general, however, the small birds were reckoned indigestible. It is related of the gourmand Clodius Æsopus that, wishing to make a great display of prodigality at a feast, he caused song birds to be served up at it in place of beccafichi. See Valerius Maximus (ix, s), and Pliny (H. N. x, 71.) Even the nightingale was sacrificed to this monstrous taste. (Horat. Sat. ii, 3, 245.) COMM.

Martial intimates that when he could get a fat turtle to dine upon he was indifferent about other delicacies. According to Averrhoes, it is of a hot nature, and has a wonderful effect in sharpening the understanding. Apicius directs us to dress it like the partridge. Galen states that the turtle, partridge, and all fowls which are of a dry nature, should be suspended for a day before they are eaten.

Galen mentions that the flesh of pheasants resembles that of domestic hens, but is more nutritious and savoury. Simeon Seth says that it is wholesome, easily digested, and forms good blood. Averrhoes prefers it to all other fowls. The tetrao, which is mentioned by Pliny and Athenæus, is generally supposed to be the bustard; but Bellonius and Ludovicus Nonnius take it for the *fasiano negro* of the Italians, or the wood pheasant.

Galen and our author have omitted to take notice of quails. Simeon Seth says that their flesh is heating, coarse, indigestible, and unwholesome. Rhases, however, says of the quail, that in lightness it is second only to the starling; that it is not very excrementitious, nor accounted very heating. Averrhoes says that it is of a moderate temperament, but somewhat heating; that it is delicate, forms good chyme, and is excellent food for persons in good health, and for convalescents. Lucretius and Galen mention that the quail can live upon hellebore.

Q. Hortensius is "damned to everlasting fame," for having first presented the peacock at his table. (Varro, de Agricult. iii; Macrobius, Satur. iii, 13; Pliny, H. N. x, 20; Ælianus, H. A. v, 25.; Tertulianus, de Pallio.) It came afterwards to be thought an exquisite delicacy, although Horace had declared of it that, were it not for its price, it would not be thought superior to the common domestic fowl. (Sat. ii, 2.) Simeon Seth,

COMM. like Galen and our author, says that its flesh is indigestible and excrementitious. Apicius directs us to dress it like the thrush. The poet Juvenal asserts that sudden deaths are occasioned by the indigestion arising from eating peacocks, (Sat. i.) It appears, from Varro and Pliny, that the Romans reared them in great numbers for the table.

The ostrich is often mentioned by the ancient authors as an article of food, although, as Galen says, it be excrementitious and indigestible; and hence, most probably, it is proscribed in Scripture. Agatharcides makes mention of a savage race of people, who were called Ostrich-eaters, (Ap. Photium.) The "afra avis," mentioned by Horace, is said by his commentator, Acron, to have been the ostrich. Porphyrion, however, rather supposes it to be the gallina numidica, or *guinea-hen.* It was the same as the meleagris, which Schneider (ad Ælian. N. A. iv, 42), and Schweighäuser (ad Athen. xiv, 20), agree in referring to the pintada, or *guinea-hen.* Apicius directs us to dress it with pepper, lovage, thyme or savory, honey, mustard, vinegar, pickle, and oil. Rhases says that its flesh is very coarse.

The otis was the *otis tarda,* or bustard. Xenophon, who gives a graphic description of the mode of hunting it in Persia, says that its flesh is most delicious. Galen and Simeon Seth say that its flesh is intermediate between the goose and the crane. Apicius gives very complicated receipts for dressing it. It is the tetrax of Nemesianus.

The flesh of the domestic fowls, says Simeon Seth, is of easy digestion, and contains good juices, especially the flesh of those which are beginning to lay eggs. Chickens, he adds, are of easy digestion, and form blood of moderate consistence, neither very thin nor too thick: they are excellent food for persons who do not take strong exercise. It appears from Martial that the Romans were fond of capons. (xiii.) Both Aristotle and Pliny mention that cocks were converted into capons by means of a heated iron.

The ficedula, called συκαλὶς by Aristotle, was much sought after by the Romans. It was the *beccafigo* of the modern Italians, who are still very fond of it. Its flesh being fat, it was dressed with much pepper, as we learn from Martial and Petronius Arbiter.

Galen and Simeon Seth agree that the flesh of geese is in-

digestible and excrementitious, and nearly allied to the ostrich. Comm. It would appear, from Odyss. xix, 536, that tame geese were reared for food in the heroic ages.

According to Martial, the breast and neck are the only parts of the duck which are fit to be eaten. (Xenia.)

Athenæus mentions that the swan was sometimes brought to the table. (Deipnos. ix.) Its flesh is very hard.

The crane and the stork were not regular articles of food, but Horace mentions that the latter had been used as such for the first time in his days (Sat. ii, 2, 49); and Athenæus enumerates the former among the viands at a banquet. Psellua calls the crane nutritious, but difficult of digestion.

The tongue of the flamingo (*Phœnicopterus ruber*) was reckoned an exquisite delicacy by the Roman epicures. See Martial (xiii, 71); Juvenal (Sat. ii); Philostratus (in vit. Apoll.) The favorite delicacy of Heliogabalus was the tongue of the flamingo. (Aug. Hist.)

The present is as good an occasion as we shall most probably find, of saying something regarding the use of the locust, or *gryllus migratorius*, as an article of food. Every person will think of John the Baptist, who lived on locusts and wild honey, in the desert of Arabia. Agatharcides gives a very curious account of the *Acridophagi* or locust-eaters. He describes them as being of a very slender make, and extremely swarthy. He says they did not live beyond forty, being cut off by a sort of tick (*ricinus*) which formed in their bodies. (Apud Photium.)

SECT. LXXXIII.—ON EGGS.

The eggs of hens and pheasants are the best of all; those of geese and ostriches not good: of all animals, fresh eggs are superior to the old. Those that are moderately boiled are most nutritive; those that are slightly boiled pass downwards most easily, and smooth asperities in the throat. All the other kinds are difficult to digest and evacuate, and contain thick juices, except those that are said to be suffocated. These are prepared by beating up raw eggs, sauce, wine, and oil, and coagulating to a middling consistence in a double vessel. In this state they are of easy digestion, and supply good juices. But of all others the fried are the worst.

COMM. COMMENTARY. Our author, Oribasius, and Aëtius copy their account of eggs from Galen.

Hippocrates says that they are nutritious, strengthening, and flatulent. See also Celsus (ii, 18.)

See a curious account of the medicinal properties of eggs in Pliny. (H. N. xxix. 3.)

Rhases recommends to eat eggs in a soft state, with pepper and marjoram. (Cont. xxxiii.) He says that the best eggs are those of the hen and partridge, and next to them those of the duck. Those of geese, he says, should not be eaten. (Ad Mansor. iii, 13.)

The ancients preserved their eggs in the flour of beans, chaff, or bran. (Pliny, H. N. x, 61; Columella, viii, 6; Varro, De Re Rustica, iii, 9.) Pliny mentions that, if an egg be macerated in vinegar, it will become so soft that it may be drawn through a ring without breaking. Harduin says that he had verified the truth of this fact by experiment.

Horace affirms that eggs of an oblong shape are the best:

> "Longa quibus facies ovis erit, illa memento
> Ut succi melioris et ut magis alma rotundis
> Ponere."
>
> (Sat. ii, 4.)

We have here adopted the emendation of Bentley. The commentator Acron, however, read *alba*, but took it in the same sense as *alma*.

The ancients used to begin their banquets with eggs, and hence the expression "ab ovo ad malum;" that is to say, from beginning to end of a banquet.

Galen and Simeon Seth agree that eggs which are boiled hard, or which have been roasted in ashes until they are hard, become indigestible, and supply heavy nourishment to the body; but such as have been fried they more especially condemn. When boiled to such a consistence as that the white was just beginning to coagulate, they were called tremula. When so soft that the albumen was not all coagulated, they were called sorbilia. In both these states they are much approved of by Galen, Seth, and all the authorities. Galen especially commends the eggs of the hen and of the pheasant. Those of the goose and ostrich, he says, are inferior.

SECT. LXXXIV.—ON BEASTS.

Among quadrupeds, swine's flesh is more nourishing than any other food, because it is most nearly allied to the human in taste and smell, as some have declared who have tasted human flesh by mistake. But the nourishment derived from it is viscid and imperspirable. That from sheep is excrementitious, and supplies bad juices. That from goats is acrid, and has bad juices. But the worst of all is the flesh of the buck-goat as to the quality of its juices and to digestion. That of oxen forms melancholic humours; that of hares has thick juices, but less so than that of sheep and oxen. That of roes is hard and of difficult digestion. In general, the flesh of young beasts is more humid, more tender, and more digestible than that of the aged; of gelded animals than of those having testicles; and of the well-fed than of the lean.

COMMENTARY. Athenæus remarks that the flesh of beasts, especially oxen, formed the principal part of men's food in the heroic ages, as appears from Homer. From one passage in the Iliad (xxiv, 263), and another in the Odyssey (ix, 220), it may be reasonably conjectured that they also lived upon lambs and kids. (Deipn. i, 19.) We may add, that Sophocles represents Philoctetes as living, while in Lemnos, upon the birds which he killed with his fatal bow. It is generally supposed that Pythagoras interdicted his disciples entirely from the flesh of animals; but the truth of the matter seems to be, that he recommended a spare use of it, and allowed to eat such animals only as were used for sacrifices. See Iamblichus and Porphyrius (De Vitâ Pythagoræ.) Plutarch, in two treatises, discusses the propriety of eating flesh. COMM.

Hippocrates states the particular characters of the different kinds of flesh very correctly. He remarks that the flesh of wild animals is lighter than that of domesticated.

According to Aristotle, the flesh of beasts which have been reared upon marsh pasture is less wholesome than that of beasts brought up on higher grounds. (Hist. An. viii, 12.)

The general remarks of Celsus may best be given in his

Comm. own words: "Quadrupes omne animal, si lactens est, minus alimenti præstat. Omne etiam ferum animal domestico levius; et quodcunque humido cœlo, quam quod sicco natum est. Deinde eadem omnia pinguia, quam macra; recentia quam salsa; nova quam vetusta, plus alimenti habent. Tum res eadem magis alit jurulenta, quam assa; magis assa, quam elixa."

Galen remarks that the fleshy parts of quadrupeds form the best blood. When boiled, he says, it supplies the body with more juicy, and when roasted, with drier food. The temperament of domesticated animals, he adds, is more humid or juicy than that of wild, owing to the dampness of the atmosphere in which they live, and their inactivity. For wild animals among the mountains being exposed to privations and fatigue, their flesh is drier, contains no fat, and is less disposed to putrefaction than the flesh of domesticated animals. He states that of all animals, whether fowls or beasts, the flesh of such as are growing is better than those which are past their utmost growth; that such as are at their growth hold an intermediate character; but that the flesh of such as are very young or old is bad, because, in the latter case, it is hard, dry, and fibrous, whence it is difficult to digest, and not nutritious; while, on the other hand, the bodies of very young animals, being mucous (gelatinous?), watery, and therefore excrementitious, readily pass through the bowels undigested.

Actuarius states that animals which lead an indolent life are more humid and excrementitious; whereas such as are much exercised are drier and lighter. Upon the whole, he adds, the more the colour of flesh declines from white, the farther is it removed from wholesomeness; it is also to be known that wild animals are hotter and drier than domesticated.

Haly Abbas says that the flesh of all animals is heating and humid, forms much blood, and is nutritious. Avicenna remarks that flesh strengthens the body, and is readily converted into blood. According to Rhases, flesh is the most nutritious of all aliments, and disposes most to plethora; hence, those who live much upon it require frequent venesection, especially if at the same time given to drinking wine.

Of all kinds of animal food, pork was almost universally esteemed by the ancients as the best. Hippocrates repeatedly

speaks of it as being most wholesome and nutritious, and Galen says the same of it in the strongest language. He states that the athletæ, if for one day presented with the same bulk of any other article of food, immediately experienced a diminution of strength; and if the change of diet was persisted in for several successive days, that they fell off in flesh. He adds that he had been credibly informed by persons who had been compelled, under extraordinary circumstances, to taste human flesh, that pork bears a near resemblance to it. Celsus praises it for its lightness: "Inter domesticas vero quadrupedes, levissima suilla est." Aëtius, Oribasius, and, in a word, all the Greek authorities subsequent to Galen, deliver exactly the same character of it as he. See, in particular, Simeon Seth. He says, that the flesh of swine a year old is the best, and that very young pigs are not to be eaten, as being too humid and excrementitious. He adds that the flesh of wild boars furnish the best food, being neither so excrementitious nor so viscid as that of tame swine. Martial declares his fondness for young pigs fed upon milk. The Arabian authors display (as might be expected) their religious prejudices against the flesh of swine. Avicenna merely remarks of it that the Christians, and those who imitate them, say that the flesh of the wild boar is the best of all. Averrhoes refers to the opinion of Avicenna. Rhases, who has treated of Dietetics in three distinct works, has nowhere, so far as we can discover, recommended pork as an article of food. Haly Abbas, however, speaks favorably of it; he, it would appear, being a Magian. Various receipts for dressing pork are given by Apicius. As a sauce for the flesh of the wild boar, he recommends a composition of honey, pickle, sodden wine, and raisin wine. The wild boar is mentioned as a favorite delicacy of the Roman epicures by Juvenal and other writers of that age. Cato, the Censor, gives very sensible directions for the preparation of ham. (De Re Rusticâ, 162.) It will be perceived that our author states that pork is imperspirable. Sanctorius confirms the truth of this statement. Both Cicero and Porphyry quote the saying of Chrysippus, that a soul or living principle was given to swine, as a sort of salt, to preserve their flesh from putrefaction for the use of man. COMM.

Mutton was no great favorite with the ancients. Galen,

COMM. Aëtius, Oribasius, and Simeon Seth agree with our author, that it is inferior to pork, as being more excrementitious, and containing worse juices. Averrhoes, however, accuses Galen of being prejudiced against the flesh of wethers and lambs, which, he affirms, are inferior only to kids in excellence; he even speaks favorably of the flesh of rams. (Collect. v, 32.) Rhases ranks mutton as second only to kid. Seth says that the best mutton is that of a sheep a year old. Apicius gives full directions for cooking mutton and lamb. (viii.)

All the ancient authorities speak of goats' flesh in much the same terms as our author; namely, as being acrid, and containing unwholesome juices. Hippocrates says it has all the bad qualities of beef. That of buck-goats is said by Galen to be particularly bad; and, next to it, those of rams and of bulls. Of kid, he speaks favorably, as being next in excellence to pork; then he ranks veal. But lamb, he says, is humid, gelatinous, and mucous. Rhases and Averrhoes rank kid first, and then lamb. The poet Hesiod recommends kid as a delicious article of food during the heat of summer. (Op. et Dies, i, 590.) According to Athenæus, kid imparts more firm and substantial nourishment to the body than any other kind of flesh, not even excepting pork and lamb. (ix, 66.)

The Arabians mention the gazelle (*antelope dorcas*) as being nearly allied but superior to the goat. Simeon Seth says that the flesh of the dorcas is better than that of any other wild animal, and that it is allied to the human body.

Hippocrates calls beef a strong, astringent, and indigestible article of food. Celsus ranks it among the articles which are not apt to spoil in the stomach. Oribasius says, that it is more than moderately nutritious, but imperspirable, and forms thick blood. Like Galen and our author, he says that it proves injurious to those who are subject to collections of black bile. Seth says that it is difficult of digestion and distribution, but when digested, sufficiently nutritious. Rhases says, that it supplies much nourishment of a gross nature, and forms thick blood. Averrhoes says that the flesh of heifers is good, not being so viscid, cold, and dry as the flesh of oxen. The sauces recommended by Apicius for the flesh of oxen and heifers contain various spices, and aromatics with vinegar, pickle, and oil.

The glis is mentioned as a favorite delicacy of the Romans by Varro, Pliny, Martial, Galen, and Ammianus Marcellinus. We learn from Varro that it was regularly reared for the table. (R. R. iii, 15.) It is the *glis esculentus* or rellmouse. COMM

All the authorities agree that the flesh of the stag or roe is difficult to digest. Hence Rhases forbids it, except after hard exercise. Simeon Seth adds that, as in summer, stags frequently eat poisonous serpents, it may be dangerous to take of their flesh at that season. Celsus appears to have had a more favorable opinion of venison than most of the ancient authorities, for he ranks "omnis venatio" among the things which agree best with the stomach. Seth says that hare is sufficiently nutritious, if properly digested, but that it disagrees with persons of a dry temperament, and is apt to form melancholic humours. The poet Martial also praises it extravagantly. Apicius gives many complicated receipts for dressing hares. Pliny remarks that there never is any fat on hares. (Hist. Nat. xi, 85.) Hippocrates says that their flesh is dry and astringent. Horace frequently praises the shoulder of the hare. (Sat. ii, 4, 44.) In our days, the loins are preferred. The cuniculus, or rabbit, was greatly esteemed in Spain, but does not appear to have been much used by the Greeks or Romans.

Galen says the ass was eaten in times of scarcity, but was not a regular article of food. Xenophon, however, mentions, in the 1st book of the 'Anabasis,' that the flesh of the wild asses caught in the Syrian desert was most delicious. Martial also speaks of the wild ass as being tender. (Epigr. xiii, 97.)

SECT. LXXXV.—ON THE PARTS OF ANIMALS.

The extremities are tendinous, without fat and without flesh; and are therefore viscid, contain little nourishment, and are laxative of the belly, except those of birds owing to their great dryness. The snout and ears are gristly and indigestible. The tongue is spongy, full of blood, and gives little nourishment. The glands are sweet and friable; and those of the breast are sweeter than the others, and, in particular, those of swine which are giving milk. These are no less nutritious than the flesh. The kidneys

and testicles are strong-smelled and indigestible, but those of cocks fed upon grain are sweet, and supply a good nourishment to the body; whereas those of bulls, buck-goats, and rams are indigestible, and contain bad juices. The brain produces phlegm, thick and bad chyme, is difficult to evacuate and digest, injurious to the stomach, and occasions nausea; but when properly digested it is sufficiently nutritious. The marrow is oily and sweeter than the brain, but in other respects resembles it. Fat and suet contain little nourishment, and are hurtful to the stomach. The heart and liver contain thick juices, are difficult to digest and evacuate. But the liver of swine is better. The spleen contains bad juices, and occasions melancholic humours. The lungs are more digestible as being spongy, but contain less nourishment and form phlegm. The stomach, womb, and intestines are hard, indigestible, and form phlegm. In general, the nourishment from wild animals is drier and less excrementitious than that from tame. All blood is of difficult digestion, especially the thick and melancholic, as is that of oxen; but that of hares is esteemed very delicious, and many are in the practice of boiling it with the liver, and some with the other viscera. Some eat also that of young swine; and even Homer was aware that the blood of goats is eaten by certain people.

COMM. COMMENTARY. Since our author has stated very distinctly the characters of the parts of animals (having abridged the fuller account of Galen), it will serve no purpose for us to enlarge upon every one of these articles; and, therefore, we shall be content with making a few cursory remarks. For further information, see Galen (de Alim. Facult. and de Euchym.); Oribasius (Med. Coll. v); Aëtius (ii); Rhases (ad Mansor. iii, 11); Haly Abbas (Theor. v, 22); Serapion (de Simpl. ex Animal.)

Galen remarks that, as some rendered the liver of swine sweet, by feeding them upon dried figs, so he knew some persons who were in the practice of preparing the livers of geese in like manner, by feeding them upon milk, by which means they were rendered not only delicious, but also very nutritious, wholesome, digestible, and not difficult to evacuate. Oribasius and Haly Abbas speak of it in much the same terms; but Haly adds that much of it ought not to be eaten at once, as it is slowly

digested. Athenæus speaks of it as a delicacy in great request at Rome. (Deipnos. ix, 32). The liver of a white goose fed upon fatty figs is one of the delicacies mentioned by Horace as having been presented at the supper of Nasidienus. (Sat. ii, 8.) See also Juvenal (v, 114), and Persius (vi, 7.) If we may believe Martial, the liver, in these cases, sometimes grew to such a size as to surpass the body of the animal. (Epigr. xiii, 58.) We are informed by Pliny, that it was disputed to whom the culinary art was indebted for the discovery of this exquisite delicacy. (H. N. x, 21.) COMM.

Galen states that all fat and suet are of an oily nature, and that they ought rather to be used as condiments than as articles of food. Serapion gives the most circumstantial account of the qualities of these animal oils.

The vulva or womb of a sow was esteemed an exquisite delicacy by the Romans. There were three kinds of it—that is to say, it was taken in three different states of the animal. The first, called ejectitia, was procured by forcing the animal to part with its young. The second, or porcaria, was the womb of the animal, taken after it had littered. The third, called sterilis, was the womb of a sow that had never been with young. This last is ranked by Celsus among those things which are useful to the stomach. See Plutarch (de Esu Carnium); Pliny (Hist. Nat. xi, 37.) Simeon Seth, however, condemns it as indigestible. (See Not. Bogdani.)

SECT. LXXXVI.—ON MILK.

Milk, when digested, is nutritive, but is injurious to the gums and teeth; and, therefore, after taking it, one ought to rinse one's mouth, first with honied water, and then with an astringent wine. It also produces headach, occasions flatulence of the stomach, and hypochondria, and engenders stones in the kidneys. The more watery kind contains less nourishment, but is more laxative, while, on the other hand, the thick is more nutritive, and moves the belly less. That of the goat is of a middling consistence, as that of the sheep is thicker; and it, immediately after the ewe has brought forth lambs, is thinner, but it afterwards becomes thicker and worse.

COMM. COMMENTARY. It appears, from Homer, that the milk of various animals was used for food in the heroic ages of Greece. His commentator, Eustathius, remarks that it is very nutritious, and, in proof of this, relates the case of one Philinus, who used no other food or drink. (Ad Iliad. xiii, 6.)

Hippocrates, who often makes mention of milk as a medicine, and as an article of food, states that it sometimes occasions the formation of stones in the bladder (de Aer., Aquis et Locis, 24); and this opinion was adopted by all the ancient authorities on medicine. Milk, he says, is bad for those who are subject to headach, for those in fever, or who have flatulency of the bowels, with rumbling or thirst; also for those who are bilious and have bloody discharges from the bowels. He recommends it in consumption, and during convalescence from protracted fevers. (Aph v, 64.)

According to Galen, the thickest milk of all, and the fattest, is that of cows; the most liquid and least fat is that of the camel; and after it that of the mare, and then of the ass; the milk of goats is of a middle consistence, and that of sheep thicker than it. It is clear, he adds, that thick milk contains more cheese, and liquid more whey. Liquid milk, therefore, is more laxative than thick; and, on the contrary, thick milk is more nutritious than liquid. He mentions that whey, either alone or with a certain mixture of salt, may often be used as an excellent laxative medicine. He states that if a goat or any other animal eat of scammony or spurge, her milk will be rendered purgative. He says that milk is most beneficial in complaints of the chest, but most injurious in diseases of the head and hypochondrium. He, and all the ancient authorities after him, state that milk is apt to hurt the teeth.

Celsus calls milk a wholesome and nutritious article of food; but says that it is apt to disagree with the stomach, and to prove flatulent. The learned Varro says of milk: "Est omnium rerum quas cibi causa capimus liquentium maxime alibile, et id ovillum, inde caprinum." (De R. R. ii, 11.)

Aristotle arranges the milk of the camel, the mare, and the ass, in the same order, with respect to consistence, as Galen. (H. A. iv, 20.) Pliny, evidently having in view this passage of Aristotle, says that the milk of camels is the thinnest, then that of the mare, and that the milk of asses is the thickest.

This is going further than he was justified by his authority. Comm.
He remarks that the milk of cows gives the most cheese. (Hist. Nat. xi, 41.)

Dioscorides calls milk nutritious, laxative and flatulent. His account of its properties is interesting. (ii, 74.)

All the Greek authorities subsequent to Galen evidently copy from him. Seth says that the longer milk is kept the worse it becomes. When properly digested, he adds, it moistens the body, induces soundness thereof, and is useful in complaints of the chest.

According to Haly Abbas, the milk of cows is the thickest of all, and the most nutritious; that of camels the thinnest, and the least nutritious; goat's milk is intermediate between them; the milk of sheep, intermediate between that of cows and goats; and the milk of asses, between that of goats and of camels. (Theor. v, 26.) Rhases enumerates them in a considerably different order; he says that the milk of cows is the thickest, and that of asses the thinnest, while that of goats is intermediate. (Ad Mansor. iii, 15.) Averrhoes calls the milk of asses and of goats the best. See also Serapion (ex Animalibus, 457); and Avicenna (ii, 2, 434.)

The following remarks of Macrobius seem to us very acute and pertinent; and, if well founded, they ought to operate as a powerful consideration to every healthy mother to suckle her own offspring: "Quamobrem non frustra creditum est, sicut valeat ad fingendas corporis et animi similitudines vis et natura seminis, non secus ad eandem rem lactis quoque ingenia et proprietates valere. Neque in hominibus id solum, sed in pecudibus quoque animadversum. Nam si ovium lacte hædi, aut caprarum agni forsitan alantur: constat ferme in his lanam duriorem, in illis pilum gigni teneriorem." (Saturn. v, 11.)

The Galactophagi, a Scythian nation who lived principally upon mare's milk, are made mention of by Homer (Iliad, xiii), and by Stobæus (Sermo, v.) Eustathius says that they made much use of a preparation from milk, called oxygala. (Ad Iliad. u. s.)

Aristotle calls butter the fat of milk, which has concreted to the consistence of oil. (Hist. Animal.) Hecatæus, in Athenæus, calls it the oil of milk. (Deipnos. x.) Dioscorides says that it is used for condiments instead of oil, and in confectionary instead of suet.

SECT. LXXXVII.—ON THE DRINKING OF MILK.

He who drinks milk ought to abstain from all other food until it be digested, and pass downwards. It is best therefore to drink it in the morning, newly milked, and to take no food after it, nor any hard exercise, because this would make it turn acid. But it is better to walk about gently, and rest between, without sleeping. After doing this, the first part will be evacuated, and then one may drink another part, and when it is evacuated another may be taken. At first, therefore, it purges properly, not indeed from the general system, but what was contained in the belly. Afterwards it enters the veins, and nourishes excellently, and is no longer evacuated. In bilious defluxions, and colliquative diarrhœas, the milk should be given boiled. Boil it at first gently, and for a short time, so that none of it may run over, and that part of it may be consumed. Afterwards it may be boiled more and more, taking care not to burn it, nor convert it into cheese. This will be best guarded against by boiling it softly, and clearing away what is separated by the agitation. It may be agitated with a smooth and slender reed; and, if it froth at the lips, this may be cleared away with a sponge, for often the part there spoils all the rest. The milk then, as is said, ought to be boiled until it become thicker and sweeter than the raw. And the thin and serous part may be dissipated by putting heated pebbles into the milk. This is beneficial in defluxions of the belly, and particularly in bilious ones.

COMM. COMMENTARY. This account of the process of administering milk is taken from Oribasius, who, in his turn, is indebted to Ruffus. Avicenna, in like manner, copies from Ruffus. There is not in any other ancient author so full a description of the process of boiling milk. On the ancient modes of preparing milk for various purposes, and their uses, see 'Geopon.' (xviii), and Pliny (Hist. Nat. xxviii, 38.) Pliny mentions that some cure gout in the hands and feet by milk. Simeon Seth joins our author, or rather Ruffus, in recommending boiled milk in dysentery. He likewise praises its effects in phthisis and dry coughs.

The method of preparing milk for use by putting heated

stones into it, is mentioned by Dioscorides, Pliny, and others. Serapion recommends heated iron. See the following Section. Galen was aware that milk coagulates in the stomach before it is digested. (De Al. Fac. iii, 15.) COMM.

SECT. LXXXVIII.—ON CURDS AND WHEY.

By powerful boiling at a strong fire without smoke, the serous part of the milk is separated from the caseous, and is then strained through a sieve or piece of rag carefully, and to the serous part is added a moderate quantity of honey, or of vinegar and honey, or salts; and it is given to evacuate the bowels in the quantity of two sextarii to adults, and to younger persons not less than a sextarius. And milk thickened by ignited pebbles or iron may be given with advantage for dysenteries and alvine discharges.

COMMENTARY. The method of preparing the schiston is thus described by Pliny: "Medici speciem unam addidere lactis generibus, quod schiston appellavere. Id fit hoc modo: fictili novo fervet caprinum maxime, ramisque ficulneis recentibus miscetur, additis totidem cyathis mulsi, quot sint heminæ lactis. Cum fervet, ne circumfundatur, præstat cyathus argenteus cum frigida aqua demissus ita ne quid infundat: ablatum deinde igni refrigeratione dividitur et discedit serum a lacte." (Hist. Nat. xxviii, 33.) The same process is briefly described by Dioscorides (ii, 77.) Pliny recommends the whey thus prepared for epilepsy, melancholy, paralysis, leprosy, elephantiasis, and arthritis. This preparation of milk is often noticed by the ancient authors on medicine. It evidently consisted of the whey of the milk, separated from the cheese by a peculiar process. COMM.

The melca was a preparation from milk, and is mentioned by our author in the Fourth Book § 27. It also appears to have been a sort of curds and whey, or *du lait caillé* of the French, prepared by pouring hot vinegar upon milk. The process is minutely described in the Geoponics (xviii.)

The oxygal, or lac acidum, consisted of the caseous part of the milk, separated from the whey by a very complicated process, which is fully described by Columella. (xii, 8.) It is said by Galen to possess very refrigerant properties.

COMM. The aphrogala, or spuma lactis, appears to have been milk reduced to a state of foam by violent agitation.

SECT. LXXXIX.—ON CHEESE.

All cheese is acrid, occasions thirst, is difficult to digest, forms bad chyme, and engenders stones. That is best which is new, spongy, soft, sweet, and has a moderate share of salt. The opposite kind is the worst.

COMM. COMMENTARY. Hippocrates calls cheese flatulent and indigestible. Celsus also calls it flatulent, and ranks old cheese among the unwholesome articles of food. He speaks favorably, however, of soft new-made cheese. Dioscorides, in like manner, says that new-made cheese without salt is nutritious, good for the stomach, of easy distribution, forms flesh, and is moderately laxative. Old cheese, he adds, is constipating. Pliny describes the kinds in most repute when he lived. (Hist. Nat. xi, 97.) He says that salted cheese wastes the body, but that soft is nutritious. (xxviii, 34.) Varro, in like manner, says that soft and recent cheese is nourishing, and not astringent, but that the old and dry is the contrary. (De R. R. ii, 11.) The spongy cheese prepared from the first milk of a goat was reckoned very delicious. It was called colostrum. (Martial, Epigr. xiii, 33.)

Galen's account of the nature and properties of cheese is so ample that our limits will not admit of doing justice to it in our brief abstract. (De Alim. iii, 17.) He remarks that milk, when it is converted into cheese, loses its watery part, and acquires heating properties, whence it becomes more apt to excite thirst, more indigestible, and unwholesome. He speaks most favorably of new-made cheese, and mentions that there was a kind much used by rich Romans, called Vatusicus, which was peculiarly excellent. As to consistence, the best cheese, he remarks, should be intermediate between the glutinous and the friable, and it ought to possess no distinct quality as to taste, unless, perhaps, a certain degree of sweetness. Aëtius, Oribasius, and Simeon Seth evidently adopt the views of Galen. Seth says that new cheese is laxative, and old astringent.

The Arabians deliver the same characters of cheese as their

Grecian masters. Avicenna, Averrhoes, and Haly Abbas speak favorably of new cheese, as being of a cold and humid nature. COMM.

Hippocrates mentions a species of cheese prepared by the Scythians, from mares' milk, and called by them hippace. (De Aer.) The same is noticed by Theophrastus (Hist. Pl. ix), and by Pliny (Hist. Nat. xxv, 44.) Cheese variously prepared and served up was esteemed a great delicacy by the *gourmands*. See Athenæus (ix, 14.) It was taken towards the conclusion of a feast. (Id. xv, 22.)

SECT. XC.—ON FISHES.

That all fishes are of a colder and more humid temperament is obvious. Those that are found among rocks are the best of all, being of easy digestion, furnishing good juices, and being moderately moistening when their flesh is not hard. Of those that do not abide among rocks, those that abide in the sea are much better than those that dwell among mud, or where rivers meet the sea. But still worse are those which are found in marshes and stagnant parts of the sea. In particular, the mullet (*capito*) being a sea fish, is moderately sweet, not very indigestible, and furnishes good chyme; but the blood formed from it is thin and weak. So it is also with the bass (*lupus*). The surmullet, as being a sea fish, is harder than the others, friable, digestible, nutritive, sweet, and free of fat.

COMMENTARY. Ancient authors make mention of whole nations of mankind that subsisted entirely upon fish. For an account of the Ichthyophagi, see Herodotus (iii, 20); Pliny (xi); Strabo (Geogr. xv); Diodorus Siculus (iv, 15); Ptolemæus (Geogr. iv); Arrianus (in Indicis); Solinus (Polyhistor, lxv); Philostratus (in Vita Apollonii, iii.) The description given of them by Diodorus is the most circumstantial and interesting. He says that the simplicity of their diet preserved them free from diseases, but that they were short-lived. A very interesting, and seemingly a very authentic account of the fish-eaters on the borders of the Red Sea is also given by Agatharcides. (Ap. Photium.) Pliny states that fish was used by his countrymen as food from the building of the city. (Hist. Nat. xxxii, 10.) COMM.

COMM. Eustathius says that, in the heroic ages, it was seldom used but in cases of want. (Ad Iliad. v, 487.) It would appear that fish was generally high priced in Greece. See Athen. (vi, 12, ed. Schweigh.) In the luxurious days of the Romans, the rage for fishes esteemed as rare was excessive. See Horace, Juvenal, and Martial (pluries.)

Hippocrates thus details the dietetical qualites of fish. Speaking generally, then, he says fishes are light food, both when boiled and roasted, by themselves or with other things. They differ from one another as follows: Those which live in lakes, the fat, and river fishes, are heavier; of sea fish, such as are found near the shore are lighter, and those which are well boiled are lighter than such as are roasted. The stronger kind, therefore, are to be given when our object is to recruit, but the lighter when we wish to attenuate or reduce. (De Affect. 46.)

Celsus ranks fish among those things which hold an intermediate place between articles of a strong and of a weak nature. He thus distinguishes them from one another: "Levior piscis inter saxa editus, quam in arenâ, levior in arenâ, quam in limo: quo fit ut ex stagno, vel lacu, vel flumine eadem genera graviora sint: leviorque, qui in alto, quam qui in vado vixit."

Plutarch states that fish is much more easily digested than flesh. (Sympos. iv.)

For a full, interesting, and judicious account of the qualities of fishes as articles of food, see Athenæus (Deipnos. viii.) We can only afford room to mention his opinion of their more general properties. He says, then, upon the authority of the Siphnian Diphilus, that of sea fishes those that live among rocks are of easy digestion, contain good juices, are detergent, light, and afford little nourishment; and that those which inhabit the depths of the sea are difficult to digest, very nutritious, and of difficult assimilation.

Galen states that fishes which live in marshes, lakes, and muddy rivers, are the worst as articles of food, because they are little exercised in swimming, and have impure food. Such fishes as live in the depths of the sea, he says, are almost free from fault as aliment, for they are more wholesome and delicious than any of the others. He mentions, as the characteristics of good fish, that they have no offensive taste or smell, have little fat, and can be kept for a considerable time without becoming

putrid, especially if put in ice. He says that fish is the best possible food to persons of indolent habits, old men, and invalids, but that it does not answer so well with persons who take strong exercise. COMM.

Of fishes, as aliments, there is an excellent account in a Fragment of Xenocrates, published a few years ago, with interesting notes, by the learned Dr. Coray, of Paris. He says that roasted fishes are most nutritious, but are of difficult evacuation; that the boiled are less nutritious, but are readily evacuated; that sea fishes are savoury, agree with the stomach, are of easy distribution, form proper blood, impart a good colour, and clear the bowels. Such as live in rivers and lakes, he adds, are bad for the stomach, form thick juices, and are of difficult evacuation. The characters of the different fishes are afterwards stated by him very fully. He says that the parts next to the tail, as being most exercised, are most wholesome.

Oribasius's account of fishes is mostly taken from Xenocrates. Aëtius is full and correct on this subject. He says that the best fishes are those which live in a sea of pure water, especially if it be agitated by winds, and if its shores be sandy, and not clayey.

Actuarius says, that of fishes which live at the sea-shore, and among the rocks, the larger supply much nourishment, of a thick nature; and the smaller, little nourishment, of a pure nature. He says, further, that sea fishes in general, being preferable to those which live in fresh waters, differ however from one another in several respects; that such as live in the open sea are more exercised, and enjoy purer food, than the others, and hence their flesh is firmer and purer, and they are more nutritious, and form thick blood; that such as live in canals and marshes are bad and unwholesome; and that those which live among rocks in pure waters have better flesh, and, being light and digestible, form thin and pure blood.

Simeon copies freely from Galen and our author. Upon the whole, he says, the blood which fishes form is thinner than that from land animals. Fish, he says, is the most proper food of invalids and convalescents.

Alexander Aphrodisiensis discusses the question why rock fishes are peculiarly excellent, and decides that it is because the water about rocks is constantly in motion, which keeps the fishes there in perpetual exercise. (Prob. ii, 82.) He would appear to have

COMM. had in view Galen, (de Facult. Alim. iii, 26.) Considering that rock fishes are particularly commended by all the authorities on dietetics, both Greek and Arabian, it has justly excited the wonder of Joannes Bruyerinus Campegius and Ludovicus Nonnius, two very learned writers on the *Res Alimentaria* of the ancients, that Celsus should rank the "pisces saxatiles" among the "res mali succi." (ii. 21.) This appears the more remarkable, as he had previously (18) classed "omnes sexatiles" among the "res leviores," and had said again of them, "levior piscis inter saxa editus, quam in arena." Taking all this into consideration, we cannot hesitate in coming to the conclusion that in the passage first quoted the text must be in fault. We beg to offer, as a conjectural emendation, "fluviatiles." Galen, Xenocrates, Psellus, Seth, and other authorities, agree in condemning river fishes, with the exception of those that run up from the sea. We may further mention, as tending to confirm this conjecture, that the same character of river fishes is given by the great Italian authority on dietetics, Domenico Romoli. (See Singulare Dottrina, &c. vii, 50.)

Rhases states that sea and river fishes are the best, especially such as have rough scales, are not mucilaginous, and are naturally of a white colour. Those, he adds, which are of a black or red colour should be abstained from. He says that all fish remains long in the stomach undigested. It is now generally admitted that it is less digestible than the tender flesh of quadrupeds.

Avicenna delivers the general characters of fishes in the same terms as Galen. He says that the best are those the flesh of which is neither too hard and dry; nor, on the other hand, too mucilaginous; and which are neither very large nor very small. Averrhoes repeats this account of them. Haly Abbas, in like manner, abridges Galen. He says that fresh fish is of a cold and humid nature, and engenders phlegm.

The ancients ate their fish either roasted, boiled, fried, or in soups. Invalids were recommended to take them boiled. The fried were believed to suit only with persons of a strong constitution.

We shall now offer a few remarks upon the fishes which were in most request at the tables of the ancients.

The labrax, or lupus, has been taken for the pike. But

Aristotle, Oppian, and Cassidorus describe it as being a cunning fish, which does not accord with the character of the pike. Bochart concludes that it is the fish called λαύρακι, by the modern Greeks; *varolo*, by the Italians; and *bar*, by the French. It seems indisputable that it was the bass, i. e. *labrax lupus* Cuvier. Icesius, as quoted by Athenæus, says of it, that it contains good juices, but is not very nutritious, nor readily evacuated, but is the most delicious of all fishes. Archestratus calls it "the offspring of the gods." All the authorities, in a word, speak highly of it. Lupi caught in the Tiber were esteemed the best. See Horace (Sat. ii, 2,) and Macrobius (Saturn. iii, 16.) There were two species, the lanatus and the varius, of which the former was in most esteem. COMM.

The pike is unquestionably the "*lucius*" of Ausonius (*Mosella*); but it seems doubtful whether it be noticed by the Greek writers. The *hepatus* would seem to be a congener. Galen says its flesh is intermediate between the soft and the hard.

The barb (*cyprinus barbus* L.) is not described by the Greeks, but is mentioned by the Latin poet Ausonius (l. c.) who says of it that it is the only fish which is improved by age.

The rhombus was esteemed a remarkable delicacy. The classical reader will recollect the ludicrous importance attached to the capture of one by the flatterers of Domitian, as described in the 4th Satire of Juvenal. It is frequently made honorable mention of by Horace and Martial. According to Harduin and Nonnius, it was the turbot, yet not the common turbot of this country (*pleuronectus maximus*), but the species called *carrelet* in French (*P. rhombus* L.) Athenæus calls it sweet and nutritious. Celsus ranks it among "res boni succi." According to Athenæus, it is the same as the ψήττα of Aristotle. It is, we suppose, the ψίσσα of Alexander (ii, 6.) It is the ψίσιον of Seth (V. Notæ Bogdani). He calls it wholesome and of easy digestion.

The cephalus was a species of the mullet, as is stated by Harduin (ad Plinii Hist. Nat. ix, 26); Schneider (ad Æliani Nat. Anim. i, 12); and Ludovicus Nonnius. It is the *mugil cephalus* L. Oppian describes the fishing of it in the most striking manner. Galen remarks that the flesh of it differs much in quality, according to the nature of the place in which it is found. Athenæus ranks it among the fishes which are sweet

COMM. and nutritious. Simeon Seth and Aëtius say that the river mullet is bad for the stomach, indigestible, and apt to form phlegm. It appears from Anaxilas, as quoted by Athenæus, that its head was in most repute. Archestratus says that it is best in the winter season.

The trigla, or mullus, as Nonnius, Harduin, Schneider, and Coray state, was the surmullet, or *mullus barbatus* L. It is mentioned as a rare delicacy of great price by Horace (Sat. ii, 2); Juvenal (Sat. iv, 15); Martial (Xenia, 74); and Macrobius (Saturnal. iii, 16.) Athenæus says of it, "Diocles writes that the flesh of the mullus is hard." (vii, 21.) Its liver prepared with oil and wine is said by Galen to have been esteemed as a peculiar delicacy.

We need not say how much the murene was sought after by all the lovers of good eating in ancient Rome. Pliny, Martial, and Macrobius inform us that those from Sicily were in most esteem; and Brydone takes notice of the peculiar excellence of the Sicilian murenes at the time when he performed his tour through that island. According to Icesius, it is as nutritious as the eel. (Athen. vii.) He mentions that the murene was called "the Helen of suppers;" and hence, no doubt, Linnæus has named the fish *muræna Helena*. It was held in much esteem, he says, before spawning. (Ibid.) Apicius gives various receipts for the dressing of it. Pepper, wine, vinegar, and oil are ingredients in almost every one of them. The murene which was served up at the supper of Nasidienus had a sauce or soup formed of such things. (Horace, Sat. ii, 8.) It is related of Vedius Pollio, that he fed his murenes with the bodies of condemned slaves. (Plin. Hist. Nat. ix, 23, and Tertullian, De Pallio.) L. Crassus, the orator, put on mourning clothes for the death of a murene. (Macrobius, Sat. iii, 15.) The *muræna ophis* is mentioned by Galen as having the same character as its congener.

The ancients were acquainted with several species of mackerel (*scomber scomber*), which Xenocrates represents as nutritious, but unpalatable and flatulent.

The anguilla, or common eel, and the congrus, or conger-eel, were despised by the Roman *gourmands*, but were greatly esteemed by the Greeks. Icesius says that eels are the best of fishes. See Athen. (l. c.)

It is supposed, by most of the classical commentators, that the accipenser was the sturgeon, but this is not quite agreed. —See this point fully discussed by Rondelet, Gesner, and Willoughby. The celebrated Artedi, and the writer of the article on Ichthyology in the 'Encycl. Method.' are quite decided in the affirmative. We need have little difficulty, then, in determining it to be the *accipenser sturio*. To our minds there can be no doubt but that it is the fish described by Constantine Porphyrogenita, under the name of βεροζήτικον. (De Admin. Imp. 42.) Both in the days of the Romans, and under the Greek empire, the sturgeon was commonly procured from the Pontus or Black Sea. Its popularity appears to have been great in the days of Horace, but it had fallen into disrepute in the time of Pliny. It seems, however, to have retrieved its character afterwards; for one of the authorities quoted by Athenæus says that it was presented at the Roman banquets, crowned with garlands, and accompanied with the playing of pipes. See also Macrobius (Sat. iii, 16.) Martial speaks of it as a much-esteemed delicacy at the imperial table. The elops and the galeus rhodius were fishes nearly allied to the sturgeon. See Pliny and Athenæus. COMM.

The isinglass fish (*accipenser huso*), although described by Herodotus (Hist. iv, 53), Strabo (Geogr.), and Ælian (xiv, 23), is not noticed by the dietetical writers, unless we suppose it the fish alluded to by Athenæus (vii, 21), where see the notes of Coray and Schweighäuser.

Martial mentions the gobius, or gudgeon, as being the first of the viands presented at the banquets of the Venetians. (Xenia, Ep. 83.) Juvenal speaks of it as being a fish of little value, or, at least, low priced. (Sat. xi, 37.) It is, in fact, as Galen states, a very small fish; but he represents it as being delicious, digestible, and wholesome, especially when caught on a stony or rocky shore. Seth gives the same account of it. Diphilus, as quoted by Athenæus, says, that when its flesh is white the gudgeon is tender, wholesome, and digestible.

The perch, according to the same authority, bears a close resemblance to the gudgeon. Ausonius calls it the *deliciæ mensarum*. Galen calls it a delicious fish, which is not only of easy digestion but most wholesome. He adds that it, and other fishes of the same description, form blood of a middling consist-

COMM. ence, that is to say, neither very watery nor too thick. Both the *perca fluviatilis* and the *P. marina* are described by Aristotle, Galen, Athenæus, and the other writers on dietetics.

The umber (*sciæna umbra*), a fish resembling the perch, but of great size, was in much esteem as a pickle, which was called *saperda*, and brought from Pontus. See Athen. (iii, 31), and Persius (Sat.)

The merle (*labrus merula*) is mentioned among the rock fishes by Galen. Diocles in Athenæus says it is of easy digestion and highly nutritive. The iülis, called *donzella* by the Italians, a fish of the same genus, is mentioned by Galen and Xenocrates as having soft flesh.

The fish called *serran* in French (*serranus anthius* Cuv.), and its congener the *labrus hepatus* L. are briefly noticed by the dietetical authorities as wholesome fishes.

On the *salmon* the Greek authors are entirely silent. It is briefly noticed by Pliny (H. N. ix, 32); but the first and only satisfactory account of it which is to be found in any Latin classic is contained in the Mosella of Ausonius. We shall give an extract from the lines in which it is first described:

> "Teque inter species geminas, neutrumque et utrumque,
> Qui necdum Salmo, nec jam Salar, ambiguusque
> Amborum medio Fario intercepte sub ævo."

Here we find marked the three progressive stages in the growth of the fish. The salar is the sea-trout, the fario is what in the north of Scotland is called the grilse, and the salmo is the full-grown salmon. Of the salmon he says:

> "Tu loricato squamosus pectore, frontem
> Lubricus, et dubiæ facturus fercula cænæ,
> Tempora longarum fers incorrupte morarum,
> Præsignis maculis capitis: cui prodiga nutat
> Alvus, opimatoque fluens abdomine venter."

The sea-trout is well described in the following line:

> "Purpureisque Salar stellatus tergora guttis."

Nonnius considers the salmon to be the *anchorago* of Cassiodorus. (De Esu Piscium, 31.) Gesner holds the same opinion. (De Aquat.)

Ludovicus Nonnius confesses his inability to determine what the scarus was. It would seem to have been the fish now called *labrus scarus* L., a small fish, according to Bellonius, being seldom more than a fathom long. Xenocrates praises it as being very savoury and of easy digestion, but of difficult distribution and evacuation. For a curious account of it, see Macrobius (Sat. iii, 16.) The sargus nearly resembles the scarus, but is more astringent and nutritious. It is the *sparus sargus* L., and, according to Rondelet, is called *sargo* by the Italians. The melanurus (*sparus m.*) is very like to it in shape and qualities. COMM.

The aurata, called by Bruyer and Nonnius in French *brame de mer;* and by Ainsworth and Artedi, gilt-head in English, (namely, the *sparus aurata* L.) is said by Celsus and Mnesitheus as quoted by Athenæus, to be a fish of difficult digestion but very nutritious. Xenocrates says that its flesh is firm, white, of easy distribution, and nutritious.

The passer, called platessa by Ausonius, is supposed by Artedi and Nonnius to have been the plaice (*pleuronectes platessa.*) It is mentioned by Horace among the delicacies at the supper of Nasidienus. The solea or sole, called lingualaca by Festus and Varro, was nearly allied to it. It is the *P. solea.* Diphilus says that both are very savoury and nutritious.

The lamprey (*petromyzon lampetra* L.) is the mustella of Ausonius, the exormiston of Cassiodorus, the γαλάξιας of Galen, the ἐχένηις of Oppian, and the βδέλλα of Strabo. See Bruyer, Nonnius, and Rondelet. It was reckoned unwholesome.

The capros, or carp, is called by Archestratus "The flower of nectar." (Athenæus Deipnos. vii.) It is the *cyprinus carpio* L.

The hake (*gadus merluccius*) is generally supposed to be the *gadus* of Athenæus (vii); the *asellus* of Ovid, Varro, and Pliny; and *oniscus* of Marcellus Sideta. It was reckoned wholesome. The ancients do not appear to have been acquainted with the *gadus eglofinus*, or haddock.

According to Willoughby, the Latin poet Ausonius is the only ancient author who has noticed the tench or *cyprinus tinca.* We are inclined, however, to think that it is the ψύλων of Aristotle (H. A. vi, 14), and the γναφεὺς of Athenæus (vii.) See Casaubon (l. c.), and Rondelet (de Piscibus.)

COMM. We may mention here, although somewhat out of place, that neither the Greeks nor Romans would appear to have used the *frog* as an article of food.

SECT. XCI.—ON THE TESTACEA, OR SHELL-FISH.

The testacea in general form a saltish and crude chyme; but of them the oysters have the softest flesh, and are most laxative. The chemæ, purpuræ, solenes, spondyli, buccinæ, cochleæ, and such like, are hard. And those covered with a soft shell (*crustacea*) such as the astaci, paguri, crabs, common lobsters, and those called squillæ, are of difficult digestion, nutritious, and bind the belly when often boiled in sweet water. The juices of all the testacea are laxative, and therefore from the land snails, although their flesh be hard, indigestible, nutritious, and contains bad juices, some make a sauce, with oil and pickle, which they use for opening the belly. The sea urchins (*echini*) are moderately cooling, contain little nourishment, and are diuretic.

COMM. COMMENTARY. Coray correctly states in his 'Notes on the Fragment of Xenocrates,' that, in the ancient classification of animals, the ὀστρακώδη or ὀστρακόδερμα, were divided into the σκληρόστρακα, or testacea, comprehending oysters, muscles, &c.; and the μαλακόστρακα, or crustacea, comprehending the crabs, paguri, &c. But, as he remarks afterwards, the σκληρόστρακα were often called by the generic term, ὀστρακόδερμα. The ancient division of the lower classes of animals is derived from Aristotle's 'History of Animals' (iv), and with some slight modifications it is the same as the classification adopted by Baron Cuvier. Pliny thus distinguishes the mollusca, crustacea, and testacea: "Piscium quidam sanguine carent, de quibus dicemus. Sunt autem tria genera: in primis quæ mollia appellantur (*mollusca?*): deinde contecta crustis tenuibus (*crustacea?*): postremo testis conclusa duris (*testacea?*). Mollia sunt, loligo, sepia, polypus, et cetera ejus generis," &c. In another place, however, he introduces confusion by applying the term mollia to the crustacea. This mistake probably originated in the resemblance between the Greek terms μαλάκια and μαλακόστρακα. (Hist. Nat. ix.)

We may mention further, that, in Oppian's delightful poem on 'Fishing,' the crustacea are described at book i, l. 259, the testacea at l. 283, and the mollusca at l. 638. On the terms used by Ælian, see 'De Nat. Animal.' (ix, 6, ed. Schneider.) Athenæus gives a long disquisition on these animals in the third book of the 'Deipnosophistæ.' COMM.

Of the testacea described by the ancient writers on dietetics, we are inclined to refer the chema to the genus *chema* of modern naturalists, comprehending several species of the cockle: the purpura to the *helix ianthina* or purple fish, in particular: the solen to the genus *solen* or bag-fish: the spondylus to the genus *spondylus* or prickly oyster: the buccina to the *buccinum harpa:* the cochlea to the *helix pomatia* or edible snail: the astacus to the *astacus fluviatilis* or crawfish: the pagurus to the *cancer pagurus* or common crab: and the cancer to some variety of the same: the *locusta* to more than one species of the *locusta* or lobster; the squilla to the *crangon vulgaris* Cuv. or shrimp: and the leo marinus indefinitely to the genus *cancer.* We think it but right, however, to confess that our own acquaintance with this department of natural history is not so extensive as to warrant us in speaking authoritatively on these matters.

We shall now briefly notice the ancient opinions on their dietetical qualities. From Athenæus, we can only find room for the following extract: "Regarding the testacea (ὀστρακόδερμα) the Siphnian Diphilus writes thus: 'Of the testacea, the squilla, astacus, locusta aquatica, cancer, and leo marinus, are of the same genus, but differ from one another: the leo is larger than the astacus; the locusta is more fleshy than the cancer; and the cancer, or crab, is heavy and indigestible.' Mnesitheus, the Athenian, in his work on 'Dietetics,' says, that the locusta, cancer, squilla, and the like, are all of difficult digestion, and yet they are much easier digested than other fishes."

Galen's account of them is interesting, and our author's is abridged from it. In general, he remarks, those which have hard flesh are most nutritious, but indigestible. They all contain saltish juices which are of a laxative nature. He says of the crustacea that they have all firm flesh, and are, therefore, difficult to digest, but nutritious. Aëtius and Oribasius copy from him without the slightest alteration of any consequence.

COMM. Frequent mention of the squilla occurs in the works of Horace, Juvenal, and Martial, as a favorite article of food. A poet in Athenæus says it should be prepared with fig leaves.

According to Dioscorides and Alexander, the echinus is stomachic and diuretic. Ælian, in like manner, calls it a restorative to a weak stomach. (N. A. xiii.)

Actuarius says that the crustacea hold an intermediate place between the fishes and mollusca; that they are, therefore, not so digestible as the mollusca, and form purer and thinner blood; that the testacea, as they get no exercise, are less proper; and that all form a thin and watery blood.

We need scarcely remark, that the Romans esteemed the cochlea, i. e. limaçon, or white snail, as an exquisite delicacy.

Simeon Seth's account is entirely borrowed from Galen.

The receipts of Apicius for dressing the locusta and carabus contain pepper, cumin, rue, mint, vinegar, wine, and oil.

It appears from the following lines of Juvenal that British oysters were greatly esteemed by the Roman gourmands:

> "Circæis nata forent, an
> Lucrinum ad saxum, Rutupinove edita fundo
> Ostrea callebat primo deprendere morsu."
>
> (Sat. iv.)

Rochester is supposed to be the ancient Rutupinum. Seneca represents them as whetters and not food. "Ostrea non cibi, sed oblectamenta sunt, ad edendum saturos cogentia." The poet Matron, as quoted by Athenæus, calls them "the truffles of the sea." Athenæus says that oysters caught in the sea adjacent to a lake or river are the best. Xenocrates remarks that sea oysters are small and saltish.

It does not appear that the ancients often used the sea tortoise or turtle fish as an article of food, and yet it is clear from Athenæus (viii, 17), that it was sometimes eaten. See Schweigh. (l. c.) Zenobius says that the flesh of the tortoise, if eaten in small quantities, is apt to produce tormina, and that if eaten largely, it purges. (Cent. iv, 32.) See also Actuarius (iv.) It is to be kept in view that the Mediterranean turtle is generally unwholesome, and the ancients in general could have little acquaintance with any other species. Ælian, however, makes mention of the Indian turtle. (N. A. xvi, 14.) See further

Gesner (de Aquat. 1141.) The chelonophagi, or turtle-eaters, are noticed by Strabo (xvi); Solinus (xvii); and Pliny (Hist. Nat. vii, 28.) COMM.

SECT. XCII.—ON THE MOLLUSCA.

The mollusca, such as polypi, sepiæ, and loligines, are hard and indigestible, and particularly the polypi. Their juices are saltish, but when digested they furnish considerable nourishment to the body.

COMMENTARY. Galen remarks that the mollusca, or mollia, have no scales, nor any rough testaceous skin, but a soft one, like that of men. Their flesh, he says, is hard, indigestible, and contains a small proportion of saltish juices; but, if digested, it affords no little nourishment to the body. The sepia, or cuttle-fish, was anciently, and is at present, much used in Rome as an article of food. Pliny states that it is laxative. He adds that it is taken in food, boiled with oil, salt, and barley-meal. Simeon Seth says of it, that it is difficult to digest, but that, if digested, it affords considerable nourishment to the body, and engenders crude humours; on which account, it ought to be taken with acrid condiments, and an old thin wine drunk afterwards. Mnesitheus, as quoted by Athenæus, says that the flesh of the mollusca is indigestible and aphrodisiacal. COMM.

Apicius directs us to dress them in much the same way as recommended by Seth; that is to say, he recommends us to add to them spices, hot aromatics, wine, vinegar, and the like.

The sepia of the ancients was indisputably the *sepia officinalis* L. or cuttle-fish; the loligo probably the *loligo parva* of Rondelet, *Angl.* calamary. The term polypus is vaguely applied, and may comprehend several species of *hydra*.

SECT. XCIII.—ON THE CARTILAGINOUS FISHES.

Of the cartilaginous fishes, the torpedo and pastinaca have soft and sweet flesh, which passes readily downwards, is easily digested, and proves nutritive. The flairs (*raiæ*), skates (*leviraiæ*),

COMM. monk fish (*squatina*), and the like, are harder and difficult to digest, and more nutritious. In general, those animals which have hard flesh are difficult to digest, and contain much nourishment. When properly digested, they furnish much and substantial nourishment.

COMMENTARY. For an account of the σελάχη, or cartilaginea, see Aristotle (H. A. v); Pliny (H. N. ix, 40); Oppian (Halieut, i); Ælian (N. A. xi, 37.)

Galen says that they are called σελάχη from σέλας ἔχειν, because their flesh has a shining appearance at night. He states that they are moderately nutritious. He remarks, that the parts about the tail of such fishes are more fleshy than the middle.

According to Athenæus, the cartilaginous fishes in general are flatulent, fleshy, of difficult digestion, and, if eaten in great quantity, blunt the sight. (Deipnos. viii.)

Dr. Coray says that the French call the Ῥίνη ange or angelot, the Βάτος raie bouclée or cavellade, the Λειόβατος raie miralet, the Νάρκη torpille or raie torpille, and the Τρυγὼν pastinaque. Harduin gives them nearly the same French names. We are inclined to refer the ῥίνη to the *squalus squatina* L. monk or angel-fish: the βατὶς and λειόβατὶς to the *raia batis* and *raia varia*, two species of skate; the νάρκη to the *raia torpedo* or cramp-fish; and the τρυγὼν to the *raia pastinaca* L. or fire-flair.

SECT. XCIV.—ON THE CETACEA, OR LARGE FISHES.

The cetacea, such as the whales, seals, balance-fish, dolphin, and great tunnies, have hard and indigestible flesh, containing thick juices. When pickled, they are more moderately so. And of the other fishes, those which are most humid and excrementitious are most fitted for pickling; but there is the same difference in pickles as in the fishes from which they are formed.

COMM. COMMENTARY. Under the class cetacea (κῆτος), the ancient naturalists ranked all the large fishes, such as the whale, the dolphin, the shark, &c. Aristotle was aware that the class called *plagiuri* by Artedi, comprehending the whale, the dolphin, &c. are viviparous, and have lungs like quadrupeds, instead of gills

like fishes. The balæna of the Greeks was a species of physeter, or cachelot. COMM.

Galen states that the flesh of all the cetacea in its recent state is excrementitious, but when pickled becomes more attenuate, and easier converted into blood. He gives them, in short, the same characters as our author does.

For a full account of the pickled fishes of the ancients, we refer to the Fragment of Xenocrates, and the third book of Athenæus. We shall give the general character of them as delivered by the latter, upon the authority of the Siphnian Diphilus. He says that the pickles prepared from sea, lake, and river fishes afford little nourishment, contain few juices, are of a heating nature, are good for the belly, and whet the appetite. The old, he adds, are better and more acrid. Of all the pickled fishes, the most celebrated was the one brought from the Pontus, called *saperda*. According to Athenæus, it was prepared from the umber (*sciæna umbra* L.) See also Galen (de Alim. Facult. iii, 41.) Hippocrates says they are desiccant, attenuant, and for the most part laxative. (De Diæta.) Diphilus says they are whetters and laxatives; and hence Galen directs them to be taken at the commencement of a meal, and particularly recommends them for old men. Rhases speaks more unfavorably of them.

It may be proper in this place to give some account of the *isitia*, or *isicia* of the ancients. With regard to the etymology of the word, then, it is derived by Macrobius ab insectione. They consisted of minced meat, either flesh or fish, boiled or roasted, and seasoned with pepper, cumin, lovage, and the like. Apicius gives receipts for preparing several dishes of this kind, from the loligo, sepia, locusta, and swine's liver. The last mentioned was inclosed in the omentum, or cowl, and must therefore have resembled the dish now called a haggis. Lampridius says that the emperor Heliogabalus was the first who prepared isicia from fishes, oysters, lobsters, squillæ, and the like. If this statement be true, the works of Apicius which we possess cannot be genuine. *Isicia* from shell-fish, the sepia, loligo, &c. are very favorably spoken of by Alexander Trallian (xi.) On the *Isicia*, see further Ludovicus Nonnius (de Piscium Esu, xxxviii), and Lambecius (ad Apic.)

SECT. XCV.—ON THE PROPERTIES OF WINE.

He who has taken the subject of health into consideration ought also to be acquainted with the powers of wine. Wine in general is nutritious, but that which is red and thick is more particularly so; but its juices are not good. The sweet also is nutritious, but not stomachic. The astringent is stomachic, but is distributed with difficulty to the parts of the body, and nourishes less. The white nourishes less still. Wine of a yellow colour is the best of all. That which is old is more heating and desiccant than the new. Such, in the main, are the properties of wine. But wine in general resuscitates the natural heat within us, and therefore it improves digestion, and forms good blood. And being of a penetrating nature, it diffuses the nourishment all over the body, and therefore it recruits those who are emaciated by disease, for it gives them an appetite for food. It attenuates phlegm, clears away the bile by urine, and imparts a good colour. To the soul also it communicates gladness and pleasure, and improves the strength. Such are the good effects of the moderate use of wine. But its immoderate use produces just the reverse; wherefore, those who are drunk become changed, are delirious, and disposed to heavy sleep. On that account, such an immoderate use of wine ought to be avoided; but at greater intervals it may be drank liberally, for it promotes the discharges by urine and perspiration. But it is better in such cases to vomit, by taking, beforehand, of honied water, so that one may not be injured by it. When one has drunk largely, it is not proper to take much of any other food; but while drinking, one should eat boiled cabbage, and taste some sweetmeat, particularly almonds. These things relieve headach, and are not difficult to vomit. It is also very proper to take the infusion of wormwood before drinking, for of all things it is the best preservative from surfeit. If one experience any painful effects from wine, one should drink cold water, and the next day again the infusion of wormwood; and by using exercise, friction, the bath, and restricted food, in this way get restored to health.

COMM. COMMENTARY. The opinions of the ancients on this interesting subject may be best learned by consulting Hippocrates (de

Diæta, ii, 22, et alibi); Celsus (ii); Pliny (H. N. xiv and xxxiii, 22, 26); Dioscorides (v); Galen (de Sanit. tuend. v, 5, and de Alim. Facult. iii); Oribasius (Med. Col. v, and Euporist. i, 12); Aëtius (i); Athenæus (Deipnos. i); Macrobius (Saturnal.); Actuarius (de Diæta, 8); Simeon Seth (de Alimentis); Serapion (de Simplicibus, &c.); Haly Abbas (Theor. 30, and Pract. i, 8); Avicenna (i, 3, 2); Rhases (ad Mansor. iii, 5, and Continen. xxxvii); Alsaharavius (Theor. xiii, 2.) Stobæus gives an interesting collection of the opinions of the philosophers and poets. (Sermo xviii.) COMM.

For an ample account of the ancient and modern wines, the reader is particularly referred to the late ingenious and classical publication of Dr. Henderson. See also Barry (on Ancient Wines), and Canonherius (de Admirandis Vini Virtutibus.)

From the works of Moses and Homer, we learn that the art of converting the innocent juice of the grape into wine must have been a very early invention. Eustathius informs us that, in very ancient times, the wines were all of a dark colour; and hence Homer applies to the sea the epithet of *wine-coloured*, *οἶνοπα πόντον*. (Comment. in Iliad. I.) Achilles Tatius makes the same remark regarding the ancient wine. (ii, 67, ed. Salmasius.) However, in the time of Hippocrates, they had wines of all colours, as well as characters. He thus describes their general properties: Black and austere wines are of a drying nature, and are not laxative, nor diuretic, nor sialogogue. It is their heat that renders them desiccative, by consuming the humidity of the body. The soft dark wines are of a more moistening nature, and are more flatulent and laxative. The sweet dark wines are of a more moistening nature, but they are heating and flatulent by imparting humidity. The white austere wines are heating, but are rather diuretic than laxative. The new are more laxative than the old, as being a nearer approach to the fresh juice of the grape, and they are nutritious; and the fragrant wines than those of the same age which have no *bouquet*, because they are better concocted; and the thick than the thin. But thin sweet wines are more diuretic, laxative, and moistening, and form weak blood.

Celsus ranks the "vinum dulce vel lene" among the "res boni succi." Sharp austere wine he places among the things which are most suitable for the stomach.

COMM. Dioscorides delivers very judiciously the different characters of wines. He concludes with remarking that, although habitual intoxication be prejudicial to the health, a moderate indulgence in wine for some days, especially after drinking water, is beneficial, by proving an alterative to the system, purging the secretions, and promoting the insensible perspiration.

From Pliny's excellent statement of the medicinal and dietetical properties of wine, we select the following remarks: "Vino aluntur vires, sanguis, colorque hominum. Vino modico nervi juvantur, copiosiore læduntur, sic et oculi. Stomachus recreatur; appetentia ciborum invitatur; tristitia et cura hebetatur; urina et algor expellitur; somnus conciliatur. Præterea vomitiones sistit. Vetus coposiore aqua miscetur, magisque urinam expellit; minus siti resistit. Dulce minus inebriat sed stomacho innatat; austerum facilius concoquitur. Stomacho minus utile est pingue, nigrum, sed corpora magis alit. Tenue et austerum minus alit, magis stomachum nutrit."

The information supplied by Galen on this subject is most ample, but in too diffuse a shape to suit our narrow limits. Upon the whole, he states, thin wines are diuretic, but supply little nourishment, whereas the thick are proportionally nutritious. He says that the Falernian, especially the sweeter kind, is one of the most wholesome wines. Athenæus gives an interesting account of the Falernian, upon the authority of Galen. He says it is fit to be drank after it is ten years old, and from fifteen to twenty; but that, when older, it occasions headach and affects the nerves. He describes two kinds of it, the sweet and the austere. The latter, he adds, is of a tawny colour, that is to say, a colour intermediate between the white and black. Dr. Henderson concludes, that the modern Madeira is a near approach to the ancient Falernian. Brasavolus and C. Avantius compare it to a wine known in modern Rome by the name of *greco di soma*. Galen gives very minute directions for forcing this wine, or giving it premature age by heat. (De Antid. i, and de Simpl. iv.) Vitruvius, for this purpose, gives directions for building the wine-cellar close to the kitchen. (vi.) Athenæus says, that wine digests the food, and, being of a subtle nature, promotes the distribution of it. We learn from him that the ancients sometimes used their wines cooled with ice. (Deipnos. iii, 99.) He thus describes the different characters of the wines

used in his time; that is to say, about the middle of the second century, P. C. Of wines, some are white, some tawny, and some dark coloured. The white is in nature the thinnest, diuretic, and heating, and being digestible it inflames the head, for it is a wine that has a tendency upwards. A dark-coloured wine, which is not of a sweet nature, is very nutritious and astringent. Sweet wines, whether of a white or tawny colour, are very nutritious; for they lubricate the passage, and thickening the humours, prove less troublesome to the head. The nature of sweet wines is to remain for a time in the præcordia, and to prove expectorant, as Diocles and Praxagoras tell. Mnesitheus the Athenian says dark-coloured wine is very nutritious, the white very diuretic and very subtle, and the tawny dry, and of all wines the one that most promotes the digestion of food. Wines carefully prepared with salt water are not of an intoxicating nature, they loosen the belly, occasion pains of the stomach, and produce flatulence, but promote digestion. Such are the Myndian and the Halicarnassian. The Coan is well prepared with salt water; the Rhodian has a less proportion of it; the Cnidian engenders blood, is nutritious, and laxative, but when drunk in large quantities it upsets the stomach; the Lesbian has less astringency and is more diuretic; the Chian is a most delicious wine, and especially the kind called Ariusian; but there are three varieties of it, the austere, the sweet, and the intermediate.—Of the Italian wines, the most delicious are the Alban and the Falernian. The Adrian is a diffusible, diaphoretic, and safe wine. (i, 25.) According to Galen, the cæcuban, so frequently mentioned by Horace, was not any one sort of wine, but a general name applied to all generous and old wines. (De Succ. bon. 2.) Old wine was much sought after: Galen says everything is impaired by age but wine. (De Antidot.) The Falernian was reckoned best from ten to twenty: the Surrentine was not thought good until twenty-five. (Athen. i.) COMM.

According to Actuarius, the thick wines are most nourishing and form the thickest blood, but are apt to occasion visceral obstructions; while, on the other hand, the thin wines are more stomachic and less nourishing. The sweet are the contrary; but the white are less hot than the others; the gold-coloured are more hot; and then the red.

Wine, says Simeon Seth, is not only nutritious, but promotes

COMM. in a great degree the distribution of the food over the body, rousing, and at the same time increasing the vital heat, and with it the urinary and other secretions. It suits best, he says, with persons of a cold and dry temperament; and, therefore, it is most proper for old men. He adds that the immoderate use of wine dissolves the vital tone, depresses the natural heat, and occasions apoplexy, epilepsy, and tumours of the body. Macrobius attempts to trace a resemblance between the effects of habitual intoxication and those resulting from exposure to extreme cold. "Quæcunque nimium algentibus, eadem contingunt ebriis. Fiunt enim tremuli, pallidi, graves; et saltu tumultuantis spiritus artus suos et membra quatiuntur. Idem corporis torpor ambobus, eadem linguæ titubatio. Multis etiam morbus ille quem παράλυσιν Græci vocant sic nimio vino, et multo algore contingit." In like manner, a modern writer, Andreas Baccius, maintains that some wines are of a cold nature.

Haly Abbas gives nearly the same characters of wine as Seth. His account of all the wines, natural and artificial, used in his time, is most ample.

Alsaharavius forbids wine to be taken when the stomach is quite empty, or after a full meal. When taken seasonably, he says it improves the appetite, increases the vital heat, nourishes the body, and clears the senses.

Avicenna, with his usual judgment and industry, collects all the information of preceding authors, to which he adds his own opinions. He remarks that the immoderate use of wine induces disease of the liver and brain, and debilitates the nerves.

Wine, says Rhases, warms the stomach and liver, and dispels flatulence, promotes digestion, provokes the urinary and alvine discharges, and gladdens the mind.

Serapion copies mostly from Galen in delivering the general characters of wine. He disapproves of wine made with salt water. For an account of it, see Pliny and Athenæus, (l. c.)

The ancients were scarcely more agreed respecting the intoxicating properties of wine than they were as to the powers of the cabbage in counteracting them. Old Cato the Censor, who was in the practice "of warming his virtue with wine," describes the following method of cooling it: "Si voles in convivio multum bibere cænareque, ante cænam esto crudam brassicam quantum voles ex aceto, et item ubi cænaveris comesto aliqua

V. folia, reddent te quasi nihil ederis, biberisque, bibesque quantum voles." (De R. R. 156.) See a long dissertation on this property of the cabbage in Athenæus (Deipnos. i, *ad finem*); also Pliny (Hist. Nat. xx, 34); Pseudo-Dioscorides (Euporist. i, 24); Nonnius (14); Simeon Seth (in voce Brassica); Geopon. (xii, 17); Avicenna, Rhases, and Serapion give the same character of it. Plutarch affirms that almonds also are a preservative from intoxication. (Quæst. vi.) COMM.

Before quitting this subject, we must notice certain peculiar modes of preparing wine. The *mustum* was wine newly made, or the fresh juice of the grape. The *protropum* was the juice which runs from grapes without pressing. The *mulsum* was a preparation of wine and honey. Dioscorides recommends two parts of wine to one of honey; but there does not appear to have been any fixed proportion. The *sapa,* called by the Greeks *hepsema* and *siræum,* according to Pliny, is must boiled to a third; and the *defrutum* the same reduced to a half. They are now called robs, a term borrowed from the Arabians. The *carenum,* according to Isidorus, is must reduced to two thirds. The *passum* was a sweet wine prepared from grapes which had been much dried in the sun. The *passum creticum,* which is much praised by Pliny and Athenæus, and is often mentioned by our author, the learned Andreas Baccius and Nonnius believe to have resembled the modern malmsey. We have already mentioned a peculiar species of wine prepared with salt water. The ancients also gave artificial qualities to wine by adding rosin, pitch, and other substances to the casks in which it was deposited. See 'Geoponica' (vii.) Dioscorides gives receipts for preparing a great variety of vinous tinctures. These were used only for medicinal purposes. (Mat. Med. v.)

It is scarcely necessary for us to remark that the ancients generally drank their wines diluted either with hot or cold water. Hence the poet Juvenal says: "Quando vocatus adest calidæ gelidæque minister." (Sat. v, 63.) According to Pliny, Staphylus first introduced this practice (H. N. viii, 56); but Athenæus refers it to Melampus (ii.) It would appear, however, from some passages in the 'Ecclesiazusæ' of Aristophanes, and from Eustathius's Commentary on Homer (Iliad, ix, 203), that the ancients often drank their wines undiluted. It was customary, during the time of dinner, to drink off a cup of pure wine to "the good

Comm. deity." See Athenæus (xv, 17), with the learned note of Schweighäuser. The wine and water were commonly mixed together according to certain fixed proportions, such as one part of wine and two of water, or two of wine and three of water, or equal parts of both. (Eustathius in Odyss. vii.) In winter it was the rule to drink equal parts of wine and hot water; but in summer two parts of water were added to one of wine. (Anonymus de Diæta ap. Phys. et Med. Min. ed. Ideler, p. 197.) It would appear that it was a common practice to drink wine with other hot things in the morning during the cold months of winter. (Hierophilus de Nutr. Meth. ed. Ideler.)

SECT. XCVI.—ON HONEY AND HYDROMEL OR HONIED WATER.

Boiled honey is rather nutritious than laxative; but when unboiled the contrary. It agrees with cold and humid temperaments, but in the warm it is converted into bile. Honied water does not agree well with those who are affected with bitter bile, being converted into bile. In such constitutions the honied water ought to be very weak; but it is not proper for those whose bowels are easily affected. The honied water may be prepared by adding eight parts of water to the honey, and thus boiling it until it cease from frothing. It is expedient also to clear away the scum as soon as formed.

Comm. COMMENTARY. Honey, says Hippocrates, when eaten with other food, is nutritious, and improves the colour; but, when taken alone, it rather attenuates than recruits. Actuarius says that scummed honey, when taken with other food, is nutritious and laxative. Democritus said, that health was best promoted by lubricating the inside with honey, and the outside with oil. Honey and bread formed the favorite food of the Pythagoreans. Athenæus (Deipnos. ii, 7.) See also Oribasius (Synops. iv, 38); Haly Abbas (v, 27); Simeon Seth (in voce Mel.)

Galen gives the following account of the phenomenon of a *honey shower*: "I have sometimes known in the season of summer a great quantity of honey to be found upon the leaves of trees, shrubs, and certain herbs, so that the country people said, jesting, 'Jupiter has rained honey.' A cold night, as for

summer, had preceded (for it happened in summer); but the temperature of the former day had been hot and dry. It was thought, therefore, by those who were skilled in nature, that an exhalation from the earth and waters, finely attenuated and concocted by the heat of the sun, had been condensed and collected by the cold of the succeeding night. This phenomenon occurs rarely with us; but it takes place frequently in Mount Lebanon every summer." (De Alim. Facult.) See also Fragmentum Theophrasti (de Melle, ed. Heinsius.) Ernestus Faber states that the honey here described is the manna of cedars. (De Manna Ebræorum, 12.) COMM.

A wine prepared from honey and aromatics is much commended by an intelligent writer on dietetics as possessing more heat and dryness than any other species of wine, and improving the appetite and colour. (Anonym. Tract. de Cibis ap. Ermerins Anecdota Græca, p. 237.)

Our author has given one method of preparing the hydromel, or honied water. Different modes are described by other authors. Thus, Mesue recommends seven parts of water to one of honey. It appears from Hippocrates, however, that it was taken more or less diluted. Pliny and Dioscorides make mention of hydromel prepared by mixing two parts of water with one of honey. This seems to have been the strongest hydromel. A species of hydromel carefully prepared, and kept for a considerable time, was esteemed a delicious beverage. Ludovicus Nonnius compares it to the mead used by certain nations of the north. They prepare it with hops and yeast, so that it is made to emulate the nature of wine. The Greeks and Romans did not make use either of hops or yeast.

In imitation of Galen, who, under the head of honey (de Simpl.), treats also of *sugar*, we shall give a brief account of the latter in this place. The *saccharum*, then, which is mentioned by Theophrastus (Frag. l. c.), Dioscorides (ii, 104), Galen (l. c.), Strabo (Geogr. xv), Pliny (H. N. xii, 17), and other ancient authors, was a natural concretion forming on various reeds, but more especially upon the bamboo cane (*bambusa arundinacea*.) The bamboo is noticed by Herodotus (Hist. iii, 98), and by Ctesias (Photii Lex.) Moses Chorenensis, a writer of the fifth century (Geogr. Armen.), is the first who makes mention of sugar procured from the cane by boiling.

SECT. XCVII.—ON SLEEP.

It remains, after having treated of everything connected with diet, to say something of sleep, which is generally taken after every other thing. Sleep, then, may be briefly defined to be a relaxation of the vital powers, occasioned by a suitable moisture irrigating the brain. When properly taken it may produce many good effects. It digests the food, concocts the humours, soothes pain, alleviates lassitude, and relaxes that which is contracted. It is also calculated to produce oblivion of mental sufferings, and to rectify the distracted powers of reason. The most suitable season for sleep is after a meal. But that during the day does not agree with all, because the time spent in sleep is not sufficient for the complete digestion of the food; and, when the digestion is interrupted unseasonably, those who rise from sleep at noon are often troubled with acidity and flatulence, and sometimes even with a gurgling noise in their bowels, unless from habit or sufficient rest these bad effects be obviated. The best season for sleep is the night, for the humidity and drowsy stillness of night contribute to perfect digestion. Wherefore after these nocturnal slumbers we feel the most desire for evacuation. The proper limit to sleep should be the complete digestion of the food, as may be ascertained by the eructations, and by tapping over the stomach; after which it may be not unuseful to awake in order to evacuate the excrementitious remains of the digestion.

COMM. COMMENTARY. The philosophy of sleep is ingeniously treated of by Hippocrates (de Insomniis), and by Aristotle (in his treatise de Somno et Vigilia.) Aristotle states that digestion goes on best during sleep. Pliny's definition of sleep seems to be taken from Hippocrates: "Est autem somnus nihil aliud quam animi in medium sese recessus." (H. N. x, 97.) Alexander Aphrodisiensis, in like manner, says, "Know that, during the day, the natural principle is less occupied with its own peculiar operations, I mean the digestion of the food, the changes of the chyle, sanguification, distribution, assimilation, and the like, the mind being engaged in its other energies, namely, the five senses, fantasy, reasoning, and memory; but during night,

on the other hand, nature operates more, and the mind less." (Problem i, 118.) See also particularly Oribasius (Med. Coll. vi, 4); Actuarius (de Diæta, 11); Avicenna (i, 3, 3); Rhases (ad Mansor. iv, 3); Haly Abbas (Theor. v, 35); Alsaharavius (Theor. xi, 3); Averrhoes (Collect. i, 21.) Averrhoes defines sleep to be the recession of the sensorial powers from their organs to the internal parts; and hence, he remarks, those who sleep with their eyes open do not perceive the objects nearest to them. The vital heat being then collected internally, he adds, the powers of the digestive faculty are increased. Rhases agrees with Galen that moderate sleep forms good blood; but that too much corrupts the juices, that is to say, impairs digestion. Haly Abbas remarks that, during sleep, the animal powers are suspended, while the vital and natural continue unaffected; and, therefore, the mind or principle of life being then disengaged, as it were, from one of its offices, is the abler to perform the others aright. Hence, he adds, digestion is best performed during sleep. Alsaharavius approves of taking rest after a meal, but recommends an hour to elapse before going to sleep. COMM.

The reader will find in Stentzel's little treatise, entitled '*Διατριβὴ περὶ τοῦ ὕπνου*,' an interesting exposition of the opinions of the ancient philosophers and physicians on this subject. There is an ingenious disquisition on the nature of sleep in the commentary of Stephanus on the Prognostics of Hippocrates. In reference to Aristotle's division of causes, he decides that the efficient cause of sleep is the rest of the particular senses, and of the general sensorium: the material, a humidity which is carried to the roots of the nerves, and prevents the exit of the vital spirit; the formal or organic, the brain, in which the humidity is collected; and the final, or end which sleep serves, the recreation of the powers. (Dietz, T. i, 142.)

SECT. XCVIII.—ON WATCHFULNESS.

The cure of watchfulness in disease, whether proceeding from pain, fever, or some acute symptom, will be treated of under the head of Fevers. But we shall now treat of the watchfulness of those in health. If their watchfulness proceed from sorrow, care,

or any mental emotions, we must endeavour if possible to remove the offending cause, and then to divert the attention by agreeable sounds. For this purpose, some seek after the gentle noise of waters, by which they are soothed and lulled to rest. After proper digestion, they should use baths, especially in the evening, and a moistening diet, such as lettuces and the like. They may also mix the green leaves of the black poppy with condiments, and eat fish of easy digestion. They should also use plenty of wine which is light and not old. When about to go to bed, their heads should be anointed with rose oil, or with oil in which the heads of poppies or mandrake have been boiled. And the oil of dill not too old is soporific. I have known rest succeeding suddenly to fatigue produce this effect. Moderate coition will sometimes do the same. Others easily procure rest by having their head and feet cooled. But if their watchfulness be occasioned by their stomachs being oppressed by the quantity or bad quality of the food (and I have known this happen, in like manner as in others it arises from an unseasonable abstinence or diminution of their accustomed food), this ought to be inquired into and the cause removed.

COMM. COMMENTARY. We have mentioned, in the 74th Section, that Galen cured himself of watchfulness by eating freely of lettuces. See further Oribasius (Med. Collect. vi); Averrhoes (Collectan. ii, 5); Alsaharavius (Theor. xi, 3); Rhases (Contin. xxxi, Aphorism, iii.) Indigestion, as regards both food and drink, is stated by Hippocrates as one of the common effects of protracted insomnolency. (De Diæt. in Morb. Acut. 13.) According to Damascius, the commentator on Hippocrates, the causes of insomnolency are, heat of the brain, an intemperament alone, or the prevalence of a bilious humour. (Ed. Dietz. T. ii, 298.)

Rhases recommends lettuces, the tepid bath, the affusion of tepid water on the head, and diluted wine. He also recommends mandragora and opium, which, he says, Galen states will produce soporific effects, not only when taken internally, but when rubbed on the forehead, and applied to the nostrils. He particularly approves of the following liniment: Pound the bark of mandragora, the seed of black henbane, and opium, with the juice of lettuce, and rub into the temples. He further

mentions, that having fallen into a state of insomnolency from too much application to study, he cured himself by eating lettuces and using the oil of the water lily externally. (Aph. u. s.) Comm.

SECT. XCIX.—ON SOMNOLENCY.

If, on the other hand, the sleep be profound and heavy, we must abstain from frequent baths and cooling unguents; we must use masticatories, and upon the whole change the regimen for one of a hotter, drier, and less nutritive character, because the affection is occasioned by a cold and humid matter irrigating the brain.

Commentary. See the Commentary on the Sections on Lethargy and Carus in Book Third. Comm.

SECT. C.—THE EPISTLE OF DIOCLES ON THE PRESERVATION OF HEALTH.—DIOCLES TO KING ANTIGONUS.

Since of all kings you are the most skilled in the arts, and have lived very long, and are skilled in all philosophy, and have attained the highest rank in mathematics, I, supposing that the science which treats of all things that relate to health is a branch of philosophy becoming a king and befitting to you, have written you this account of the origin of diseases, of the symptoms which precede them, and of the modes by which they may be alleviated. For neither does a storm gather in the heavens but it is preceded by certain signs which seamen and men of much skill attend to, nor does any disease attack the human frame without having some precursory symptom. If, then, you will only be persuaded by what we say regarding them, you may attain a correct acquaintance with these things. We divide the human body into four parts: the head, the chest, the belly, and the bladder.—When a disease is about to fix in the head, it is usually announced beforehand by vertigo, pain in the head, heaviness in the eyebrows, noise in the ears, and throbbing of the temples; the eyes water in the morning, attended with dimness of sight; the sense of smell is lost, and the gums become swelled. When any such symptoms occur, the head ought to be purged, not in-

deed with any strong medicine, but taking the tops of hyssop and sweet marjoram, pound them and boil them in a pot with half a hemina of must or rob, rinse the mouth with this in the morning before eating, and evacuate the humours by gargling. There is no gentler remedy than this for affections of the head. Mustard in warm honied water also answers the purpose very well. Take a mouthful of this in the morning before eating, gargle and evacuate the humours. The head also should be warmed by covering it in such a manner as that the phlegm may be readily discharged. Those who neglect these symptoms are apt to be seized with the following disorders: Inflammations of the eyes, cataracts, pain of the ears as if from a fracture, strumous affections of the neck, sphacelus of the brain, catarrh, quinsy, running ulcers called achores, caries, enlargement of the uvula, defluxion of the hairs, ulceration of the head, pain in the teeth.—When some disease is about to fall upon the chest, it is usually announced by some of the following symptoms: There are profuse sweats over the whole body, and particularly about the chest, the tongue is rough, expectoration saltish, bitter, or bilious, pains suddenly seizing the sides or shoulder-blades, frequent yawning, watchfulness, oppressed respiration, thirst after sleep, despondency of mind, coldness of the breast and arms, trembling of the hands. These symptoms may be relieved in the following manner: Procure vomiting after a moderate meal without medicine. Vomiting also when the stomach is empty will answer well; to produce which first swallow some small radishes, cresses, rocket, mustard, and purslain, and then by drinking warm water procure vomiting. Upon those who neglect these symptoms the following diseases are apt to supervene: Pleurisy, peripneumony, melancholy, acute fevers, frensy, lethargy, ardent fever attended with hiccough.—When any disease is about to attack the bowels, some of the following symptoms announce its approach: In the first place, the belly is griped and disordered, the food and drink seem bitter, heaviness of the knees, inability to bend the loins, pains over the whole body unexpectedly occurring, numbness of the legs, slight fever; when any of these occur, it will be proper to loosen the belly by a suitable diet without medicine. There are many articles of this description which one may use with safety, such as beets boiled in honied water, boiled garlic, mallows, dock,

the herb mercury, honied cakes; for all these things are laxative of the bowels. Or, if any of these symptoms increase, mix bastard saffron with all these decoctions, for thereby they will be rendered sweeter and less dangerous. The smooth cabbage boiled in a large quantity of water is also beneficial; this decoction with honey and salt may be drank to the amount of about four heminæ, or the water of chick-peas or tares boiled may be drank in the same manner. Those who neglect the afore-mentioned symptoms are apt to be seized with the following affections: Diarrhœa, dysentery, lientery, ileus, ischiatic disease, tertian fever, gout, apoplexy, hemorrhoids, rheumatism.—When any disease is about to seize the bladder, the following symptoms are its usual precursors: A sense of repletion after taking even a small quantity of food, flatulence, eructation, paleness of the whole body, deep sleep, urine pale and passed with difficulty, swellings about the privy parts. When any of these symptoms appear, their safest cure will be by aromatic diuretics. Thus the roots of fennel and parsley may be infused in white fragrant wine, and drunk every day when the stomach is empty in the morning to the amount of two cyathi, with water in which carrot, myrtle, or elecampane has been macerated (you may use any of these you please, for all are useful); and the infusion of chick-peas in water may be drank in like manner. On those who neglect these symptoms the following diseases are apt to supervene: Dropsy, enlargement of the spleen, pain of the liver, calculus, inflammation of the kidneys, strangury, distension of the belly. Regarding all these symptoms it may be remarked that children ought to be treated with gentler remedies, and adults with more active.—I have now to give you an account of the seasons of the year in which each of these complaints occur, and what things ought to be taken and avoided. I begin with the winter solstice.—*Of the winter solstice:* This season disposes men to catarrhs and defluxions, until the vernal equinox. It will be proper then to take such things as are of a heating nature, drink wine little diluted, or drink pure wine, or of the decoction of marjoram, and indulge in venery. From the winter solstice to the vernal equinox are ninety days.—*Of the vernal equinox:* This season increases phlegm in men, and the sweetish humours in the blood until the rising of the pleiades. Use therefore juicy and acrid things, take labour, and indulge

in venery. To the rising of the pleiades are forty-six days.—*Of the rising of the pleiades:* This season increases the bitter bile, and bitter humours in men, until the summer solstice. Use therefore all sweet things, laxatives of the belly, and indulge but sparingly in venery. To the summer solstice are forty-five days.—*Of the summer solstice:* This season increases the formation of black bile in men, until the autumnal equinox. Use therefore cold water, and everything that is fragrant; and do not indulge in venery, or do so more sparingly than is generally directed regarding these matters. To the autumnal equinox are ninety-three days.—*Of the autumnal equinox:* This season increases phlegm and thin rheums in men until the setting of the pleiades. Use therefore remedies for removing rheums, have recourse to acrid and succulent things, take no vomits, and abstain from labour and venery. To the setting of the pleiades are forty-five days.—*Of the setting of the pleiades:* This season increases phlegm in men until the winter solstice. Take therefore all sour things, drink as much as is agreeable of a weak wine, use fat things, and labour strenuously. To the winter solstice are forty-five days.

COMM. COMMENTARY. This Diocles was an ancient physician of great eminence. Galen often mentions him along with his idol, Hippocrates, as the greatest of medical authorities. Cælius Aurelianus frequently quotes his opinions in respectful terms, although belonging to a different sect from his own. Pliny says that he was next to Hippocrates in fame as in time. Octavius Horatianus calls him the younger Hippocrates. Athenæus mentions a work of his on Poisons, and another on Cookery.

Le Clerc questions the authenticity of this epistle, but seems to have had no other grounds for his scepticism than the general suspicion which has attached to all the Epistolæ Græcanicæ since the memorable controversy between the Honorable Mr. Boyle and Dr. Bentley on the authenticity of the Epistles of Phalaris. It is published in the 'Bibliotheca Græca' of Albertus Fabricius, who appears to have been satisfied as to its genuineness. Mr. Moir, the author of 'Outlines of the Ancient History of Medicine,' condemns it as apocryphal, upon the authority of Schulze. (p. 76.) All we shall say on this point is, that the evidence against the authority of this Epistle appears to us to be very inconclusive.

BOOK SECOND.

SECT. I.—ON FEVERS, FROM THE WORKS OF GALEN AND SEVERAL OTHERS.

After having treated of those things which relate to the preservation of health, we now come to the treatment of persons already in disease, and shall begin with homogeneous disorders as being the most simple. These are what are called Fevers. Wherefore, using again principally Oribasius' Epitome of the Works of Galen and several others on this subject, we shall add a very few things omitted by them.

Commentary. The following ancient authorities may be consulted on the subject of fever: Hippocrates (Epidem. et alibi); Galen (Comment. in Hippocr. Epidem., de Differentiis Febrium, Meth. Med. viii, Therap. ad Glauc. i, De Typis, de Crisibus et alibi); Celsus (iii); Pseudo-Dioscorides (Euporist. ii); Oribasius (Synop. vi, Euporist.); Aretæus (Morb. Acut. ii, 4); Aëtius (v); C. Aurelianus (Pass. Acut. ii, 10); Alexander Trallian (xii); Alexander Aphrodisiensis (Probl. i, 84, de Febribus); Actuarius (Meth. Med. iii); Pliny (Hist. Nat. xxviii, 66, xxx, 30); Palladius (de Febribus); Michael Psellus (Opus Medicum); Synesius (de Febribus); Leo (ap. Ermerins Anecdota Græca); Stephanus (Comment. in Prognost. Hippocrat. ed. Dietz); Constantinus Africanus (de Febribus); Serenus Samonicus; Vindicianus (Epistola ap. Fabricii Bibl. Græc. tom. xiii); Avicenna (iv, i); Syrasis, Avicennæ Expositor; Haly Abbas (Theor. viii, Pract. viii); Alsaharavius (Theor. vi, Pract. xxxii); Serapion (tr. vi); Avenzoar (iii, 7); Averrhoes (Collig. vii); Rhases (ad Mans. x, Contin. xxx.) Comm.

All the ancient authorities held that a fever consists of a preternatural increase of the Innate, or, as it is now called, Animal heat, which they considered as the instrument by

COMM. which the soul performs all the functions of the body. See Alexander Aphrod. (de Feb.) Thus, Palladius defines a fever to be "a preternatural heat, which begins in the heart, and is diffused by the arteries over the whole body, sensibly injuring the actions of the body." Hippocrates, Galen, Aëtius, Alexander Trallian, Psellus, Leo, and Actuarius give similar definitions. Cælius Aurelianus says of Asclepiades: "Febrium ponit signum calorem plurimum." (Morb. Acut. i, 14.) Isidorus defines a fever thus: "Febris a fervore dicta est; est enim abundantia caloris." (Orig.) Hippocrates, however, the great opponent of hypothesis in medicine, insists that there is more in a fever than a simple excess of pure heat; or, in other words, that the essence of fever is heat mixed up with noxious qualities. (De Vet. Med. § 17.) The celebrated Erasistratus maintained an opinion, lately revived by Clutterbuck and Broussais, that fevers and inflammations are identical. See Milligan's Celsus (p. 13 and 112); and Cælius Aurelianus (de Acut. Morb. ii, 3.) He further taught that in fevers the blood of the veins is thrown into the arteries. (Plutarch de Placit. Philos. v, 29.)

The Arabians adopt the opinions of Hippocrates, Alexander, and Galen. Thus, for example, Haly Abbas defines fever to be a preternatural heat proceeding from the heart, and diffused by the arteries over all parts of the body. According to him there are three kinds of fevers. The first, are seated in the spirits, and affect only the heat of the body: these are called ephemeral fevers. The second, originate in a vitiated state of the fluids, which impart a preternatural degree of heat to the heart, whence it is diffused over all the body. The third arise in the vital organs and solid parts, from which heat is transmitted to the heart. (Pract. viii, 2.) See also, in particular, Rhases (Cont. xxx.)

SECT. II.—OF THE PRINCIPAL CONSIDERATIONS TO BE INQUIRED INTO WITH REGARD TO FEBRILE AFFECTIONS.

The first thing to be considered is, whether the disease will prove fatal or not; then, if it is not to prove fatal, whether it will be acute or chronic (these considerations apply to other great disorders); and, third, whether it will come to a crisis all at once (which is peculiar to fevers), or be resolved gradually.

COMMENTARY. This Section, and great part of the contents of this book are taken from Galen (Therap. ad Glauc. i,) or from Oribasius (Synops. vi.) COMM.

SECT. III.—FROM GALEN, WHAT TO CALL THE COMMENCEMENT OF THE DISEASE.

As headach is not the same complaint as fever, so neither are insomnolency, loss of appetite, heaviness of the whole body, and a sense of lassitude; and yet each of these symptoms, although different from fever, announces its approach. A fever setting in, and more especially in an acute manner, cannot escape our notice, nor even that of a person unacquainted with these matters. Or, if we should suppose that it might escape us, I should wonder if the patient himself could be ignorant of it for more than an hour. Wherefore I call that time the commencement of the disorder, when those who are beginning clearly to be affected with the fever betake themselves to bed.

COMMENTARY. The whole of this Section is taken from Galen (de Diebus criticis), where the question is fully discussed. Aëtius, like our author, defines the commencement of a fever to be the time when the strength of the patient being overcome by the complaint, he is obliged to take to bed. On this point the Arabians venture to differ from the Greeks. Thus, Rhases and Avicenna reckon the commencement from the time when the patient first feels a departure from health. COMM.

The disagreement among the authorities upon this point is to be regretted, as it tends to obscure the doctrine of the critical days.

SECT. IV.—HOW TO KNOW WHETHER THE DISEASE WILL PROVE FATAL OR NOT.

These are fatal symptoms: A deathlike countenance, sharp nose, hollow eyes, and the other symptoms described by Hippocrates, when they do not proceed from watchfulness, or

evacuation, or want of food; also, intolerance of the light, shedding tears from no external cause, there being no particular affection of the eyes; or the one eye appearing less than the other; or the white of the eyes becoming red, or livid, or black, or having a muddiness in them; and the white of the eyes appearing during sleep, the eyelids not being closed, unless this symptom proceed from a great evacuation, or from habit. Likewise grinding the teeth, a state of delirium, picking at flocks of wool, or bits of chaff, are not favorable. Attention should also be paid to the patient's mode of lying. To lie on one's back, as it were, in a relaxed state, and to sink downwards in bed, are indications of extreme debility. It is still worse to have a cold respiration at the mouth and nostrils; and a pulse obscure, dense, and intermitting, and profuse sweatings with syncope are most mortal symptoms. If all the symptoms we have mentioned, or even more appear, or if they be fewer in number but strong, and if they be without any of the favorable ones, death is inevitable. The breathing free, pulse natural, soundness of intellect, being well disposed to take whatever is offered, the appearance of countenance and mode of reclining like those of persons in health,—all these symptoms are favorable and prognosticate recovery; and, in general, whatever symptom is contrary to the natural state indicates an unfavorable, whereas, what is correspondent, indicates a favorable termination. Concerning the prognosis from the urine, alvine discharges, and sputa, we will speak soon.

COMM. COMMENTARY. The great master of prognostics is Hippocrates, whose system of medicine was entirely based on the observation of the favorable and unfavorable symptoms of disease. It would appear that the first advances in this art were made in the temples of the gods, and especially of Æsculapius, which the sick were in the practice of resorting to in order to ascertain the issue of their maladies. See a very ingenious and learned disquisition, 'de Hippocratis Doctrina a Prognostice oriunda,' by F. Z. Ermerins, M.D. The works of Hippocrates, especially the 'Prorrhetica and Coacæ,' contain a rich treasure of observations which cannot be too much explored by the student of medicine. His prognostics are founded upon the appearances of the face, eyes, tongue, the voice, hearing, the

state of the hypochondriac region, the abdomen, the general system, sleep, respiration, and the excretions. We can do little more, in this place, than express our high sense of the value of the 'Hippocratic Treatises on Prognostics,' and recommend the study of them to all members of the profession who would wish to learn the true inductive system of cultivating medicine. We shall give as a specimen of Hippocrates' and Galen's labours, in this department, a few of Galen's remarks on the causes of the symptoms, as described by Hippocrates. It is one of the prognostics of Hippocrates, that profuse perspiration in acute fevers is unfavorable; and, in explanation of this, Galen states that a critical sweat may indeed be favorable; but that such as are profuse and continued indicate a complete prostration of the vital powers. A fixedness of the eyes is said by Hippocrates to be a fatal symptom; the reason of which, according to Galen, is, that it proceeds from paralysis, or insensibility of the muscles of the eye. Hippocrates mentions it as an unfavorable symptom when the patient lies with his mouth open; and Galen attributes this symptom to the origin of the nerves, that is to say, the brain, undergoing pressure. Hippocrates states, that involuntary discharges from the bowels are an unfavorable symptom; and Galen justly remarks that they indicate great insensibility. COMM.

The Prognostics and Aphorisms of Hippocrates are further illustrated by the learned and interesting Commentaries of Stephanus Sophista, Theophilus, and Damascius, which were published a few years ago by Dietz. From the nature of their works, it is impossible to give any satisfactory outline of their contents within our narrow limits. We shall merely give one specimen of them. It is stated in one of the Aphorisms of Hippocrates, that dyspnœa and delirium occurring together in fever, indicate a fatal termination. Upon which Theophilus and Damascius remark, that the one symptom implies disease of the heart and the other of the brain. (Ed. Dietz. T. H., p. 415.)

Celsus gives an elegant translation of this part of the works of Hippocrates. The following is his version of the description of the Facies Hippocratica: "Ad ultima jam ventum esse testantur, nares acutæ, collapsa tempora, concavi oculi, frigidæ

COMM. languidæque aures et imis partibus leniter versæ, cutis circa frontem dura et intenta, color aut niger aut perpallidus." Other unfavorable symptoms are also strikingly portrayed: "Mali morbi testimonium est vehementer et crebro spirare: a sexto die cepisse inhorrescere; pus expuere; vix excreare; dolorem habere continuum; difficulter ferre morbum; jactare brachia et crura; sine voluntate lachrimare; habere humorem glutinosum dentibus inhærentem; cutem circa umbilicum et pubem macram, præcordia inflammata, dolentia, dura, tumida, intenta, magisque si hæc dextra parte, quam sinistra est; periculosissimum tamen est, si venæ quoque ibi vehementer agituntur."

Aëtius and Oribasius, like our author, borrow almost every thing from Hippocrates and Galen.

Rhases and Avicenna, particularly the latter, treat of the prognostics in fever very fully. Avicenna, like Hippocrates, sets down deafness as an unfavorable symptom. Hippocrates had stated, that jaundice coming on before the seventh day is unfavorable; but Averrhoes affirms, that all the Indian and Persian physicians reckoned it a favorable symptom. Rhases considers yellowness of the skin an unfavorable symptom, unless the fever be of a bilious nature. Alsaharavius says it is an unfavorable complication when it does not prove critical. It is proper to mention here that Hippocrates modifies the above prognostic by stating in one of his aphorisms, that jaundice coming on on the 7th, 9th, 11th, or 14th day is favorable. (iv. 64.) Alsaharavius states it as a dangerous symptom, when the patient lies on his back with his legs drawn up. This agrees with the prognostic of Celsus "Mors denuntiatur ubi æger supinus cubat, eique genua contracta sunt." Avicenna and Averrhoes state it as a fatal symptom when the patient sinks down in bed and exposes his hands and feet. (Averrhoes, Comment. in Cant. Avicennæ.)

According to Rhases it is a bad symptom when the patient has lost his modesty, so as to expose freely those parts of the body that should be covered. He holds also that it is a bad symptom when the vomitings resemble verdigris. (Ad Mansor. x, 21.)

Prosper Alpinus gives an admirable account of the prognostics in diseases. See his work, 'De Præsagiendâ Morte et Vitâ

ægrotantium,' *passim*. He agrees with the ancients, that deafness is an unfavorable symptom, unless it occur at the time of a crisis. Like the ancients, he considers the absence of thirst an unfavorable symptom in ardent diseases, as indicating that the system is insensible of its wants. COMM.

SECT. V.—HOW TO KNOW IF THE DISEASE WILL BE OF LONG DURATION.

The duration of the disease may be ascertained from four things: from the movement of the disease itself, from the habit of the patient, from the pulse, and from the species of the fever. From the movement of the disease thus: if the four periods of a particular paroxysm have passed over quickly and in the least possible time, the disease will be an acute one, the furthest bound of which will be the seventh day, and generally it will come to a crisis on the fourth. If the periods of the first paroxysm occupy more time than this, but do not exceed twelve hours, the disease will still be an acute one, which will terminate within the fourteenth day. If it extend longer, so that the commencement and augmentation of the paroxysm alone occupy a longer period than a day or a night, such a disease will prove a long one. If the disease have no particular paroxysms, but consist of one continued paroxysm, as it were, from beginning to end, as in synochous fevers, even in this case you may call the disease an acute one. It may be judged of from the habit of the patient; for if the face and the rest of the body are already considerably wasted, an acute disease is indicated; but if nowise reduced, a chronic one; for a great collection of offending matter is indicated, which will require a length of time for its concoction. It may be judged of from the pulse: thus, a great, strong, quick, and dense pulse, is indicative of an acute disease, but the contrary of a chronic. From the species of the fever, inasmuch as hot and ardent fevers indicate an acute, whereas gentler, and, as it were, smothered fevers indicate a chronic one.

COMMENTARY. Celsus thus states the prognostics of a protracted fever: "Signa quædam sunt, ex quibus colligere pos- COMM.

COMM. sumus, morbum, etsi non interemerit, longius tamen tempus habiturum: ubi frigidus sudor inter febres non acutas circa caput tantum, et cervices oritur: aut ubi, febre non quiescente, corpus insudat: aut ubi corpus modo frigidum, modo calidum est, et color alius ex alio fit: aut ubi, quod inter febres aliqua parte abscessit, ad sanitatem non pervenit: aut ubi æger pro spatio parum emacrescit: item si urina modo liquida et pura est, modo habet quædam subsidentia; si lævia atque alba rubraque sunt, quæ in eâ subsidunt; aut si quasdam quasi miculas repræsentet; aut si bullulas excitat."

Galen has given a full exposition of these symptoms in his Commentary on the Prognostics of Hippocrates, from which Aëtius, Oribasius, and our author have borrowed largely. Rhases, Avicenna, but most especially Haly Abbas, treat at great length of this subject. See also Averrhoes (Commentaries on the Cantica of Avicenna.)

SECT. VI.—HOW TO KNOW IF THE DISEASE WILL TERMINATE BY A CRISIS, OR BY RESOLUTION.

This may be ascertained from what has been already said, namely, the species of the fever and its duration, and perhaps from the species of the fever alone. For hot and ardent fevers are of short duration, and usually terminate with some critical evacuation; whereas the gentler kinds prove more chronic, and have a tendency to abscess. From what has been said, it appears that we may prognosticate not only when the disease will come to a crisis, but also how it will terminate; for acute diseases generally terminate by critical evacuation, and the chronic by abscess.

COMM. COMMENTARY. A similar statement is made by Aëtius (v, 22.) See also Averrhoes (Comment. in Cantica Avicennæ.)

SECT. VII.—ON CRITICAL DAYS.

Of the critical days, some terminate the disease frequently, faithfully, well, completely, clearly, decidedly; and others con-

trariwise to these. But the 13th has been shown to possess an intermediate character. Some of these are such as to prove critical if they experience even the most moderate impetus of nature, such as the 7th and 14th; whilst most of them prove critical in violent commotions of the system, but not otherwise. Neither are the favorable all equally favorable, nor the unfavorable all equally unfavorable; nor is their favorableness and unfavorableness according to any order. Those in the first rank of favorable days may be arranged thus: the best of all are the 7th and 14th, next to them the 9th, and 11th, and 20th; and near to them the 17th and 5th, after these the 4th, after it the 3d and 18th. Opposed to them, of the second rank, are these: the worst, which proves obscurely critical with danger, and is, as it were, diametrically opposed to the 7th, is the 6th: near to it are the 8th and 10th, after these the 12th, 16th, and 19th. Intermediate between these is the 13th, being neither so objectionable as those of the second rank, nor so powerful in freeing from diseases as those of the first. The critical days then are thus arranged according to their degree by Galen. Numerically thus: the favorable are the 3d, 4th, 5th, 7th, 9th, 11th, 14th, 17th, 18th, 20th; the unfavorable, the 6th, 8th, 10th, 12th, 16th, 19th; the intermediate, the 13th. Some of the critical days give information concerning the others, and are hence called indicatory by Hippocrates, because they indicate the crisis that is to happen on another critical day. Thus the 4th indicates a crisis on the 7th, by inducing sweats, perspirations, or some such particular evacuation, or by displaying certain signs which had not formerly taken place, or some symptoms of concoction. Galen says that the 4th is indicatory of the 6th, although it be unfavorable, as the 11th is of the 14th, and the 17th of the 20th. Until the 14th day the crises are the most decided, next to these until the 20th; from the 20th to the 40th they gradually lose their decided character. Of these, the first in degree are the 27th, 34th, and 40th, after which are the 24th and 32d. The other numbers intermediate between the 20th and 40th are indeterminate, and those after the 40th are not properly critical, as they terminate diseases by concoctions and abscesses rather than by crises. Hippocrates seems entirely to disregard all those after the 40th day, yet he enumerates the 60th, 80th, and 100th. After these, he says that some diseases prove critical in seven

months, some in seven years, and others, as it would appear, in twice or thrice seven years.

COMM. COMMENTARY. The Father of Medicine who was profoundly skilled in Semeiology, appears to have attached great importance to the observance of the critical days. At first, as Galen remarks, he seems to have been undecided respecting certain days, and, accordingly, he gives a somewhat different list of them in his 'Prognostics' and 'Aphorisms,' from what he has given in his 'Epidemics.' His latter list of critical days differs little or nothing from that of Galen.

Galen reposes such confidence in the doctrine of critical days, that he affirms that, by a proper observance of them, the physician may be able to prognosticate the very hour when a fever will terminate. The following is his list: The 7th is particularly favorable; next, the 14th; next to these, the 9th, 11th, and 20th; then the 17th and 5th; afterwards the 4th, 3d, and 18th. The 6th is very doubtful and unfavorable; the 8th and 10th, like the 6th; the 12th, 16th, and 19th, like the 8th and 10th. Intermediate between these two lists of favorable and unfavorable days is the 13th. He informs us that Diocles and Archigenes held the 21st to be particularly favorable, but he agrees with Hippocrates in rejecting it and adopting the 20th.

Celsus follows the system of Archigenes. He says, "κρίσιμοι dies erant, dies tertius, quintus, septimus, nonus, undecimus, quartus-decimus, unus et vicesimus; ita ut summa potentia septimo, deinde quarto-decimo, deinde uni et vicesimo daretur." But he does not hesitate, afterwards, to express his distrust in the whole system; for, he adds, "verum in his quidem antiquos tunc celebres Pythagorici numeri fefellerunt; cum hic quoque medicus non numerare dies debeat, sed ipsas accessiones intueri."

The Greek writers subsequent to Galen adopt his system, with little or no alteration. Aëtius arranges the critical days thus: First in order, the 7th and 14th; then the 9th and 11th; next to them the 17th and 5th; then, the 4th; and afterwards the 3d and 20th. The 6th is usually bad.

The last of the ancient authorities, Actuarius, is very full and confident in laying down the received doctrines, with regard to the critical days. He follows Galen.

The Arabians, with scarce one exception, adopt the Galenic system. Avicenna, who treats of the critical days very fully, mentions the list of them given by Hippocrates and Galen, and also that by Archigenes, but decides in favour of the former. COMM.

Rhases mentions the critical days in the following terms: The 3d is critical in very acute fevers; the 4th is indicative of the 7th and 6th; the 5th is favorable; the 6th generally unfavorable; the 7th is a particularly favorable or unfavorable crisis; the 8th rarely critical, but if it be, unfavorable; the 11th critical and indicative of the 14th; the 12th rarely critical, and like the 8th; the 13th rarely critical; the 14th, critical and favorable; the 15th like the 13th; the 16th like the 12th; the 17th like the 9th, and indicative of the 20th; the 18th rarely critical, or unfavorable; the 19th rarely critical, or, if so, not bad; the 20th next to the 14th, and favorable; the 21st sometimes critical, but less frequently so than the 20th; the 24th resembling the 20th; after these the 27th, 31st, 37th, and 40th are critical. Averrhoes remarks, that great deference is due to Rhases' opinion upon this subject, since it was confirmed by experience, in more than ten thousand cases, in an infirmary (in infirmaria Relenson). His list is very little different from that of Galen. In his 'Continens,' he gives an account of the system of Archigenes, but prefers that of Hippocrates. (xxxii.)

Averrhoes states that the medical world was divided between the systems of Archigenes and Galen, but he inclines to the side of the latter in this case, although on most occasions given to dispute his authority.

Avenzoar, upon the whole, nearly agrees with Rhases, but expresses himself undecided with regard to the 20th and 21st days. His authority must also be allowed to be of great weight upon this subject, if we may believe Averrhoes, that he lived to the age of one hundred and thirty-five, and practised medicine from his fortieth year.

To the first class of critical days, according to Haly Abbas, belong the 7th and 14th; to the second, the 11th and 20th; to the third, the 4th, 17th, and 21st; and to the fourth, the 3d, 5th, 9th, and 18th.

Alsaharavius gives a similar list to Haly's. He inclines rather to the 20th than the 21st day.

COMM. Galen, and most of the ancient authorities, believed that the critical days are influenced by the moon. Actuarius, in particular, attributes much to the influence of the sun and moon in influencing the course of fevers.

Prosper Alpinus gives a correct summary of the ancient doctrines respecting the critical days. (De præs. Vita et Morte ægrot. vi, 4.)

SECT. VIII.—THAT CRITICAL SYMPTOMS APPEARING IN THE COMMENCEMENT ARE UNFAVORABLE.

The signs of concoction are never unfavorable, for concoction always take place when nature prevails, and therefore the signs of it are always favorable. But the critical signs may sometimes appear unfavorably, owing to the crisis partaking of a double character (as was said with regard to the critical days), being sometimes favorable and sometimes unfavorable. They ought not therefore to appear at the commencement, nor during the increase of the disease, but after its acme, at which time nature is prevailing over the disease.

COMM. COMMENTARY. The opinion here delivered is derived originally from Galen, but is maintained also by Oribasius, and the other authorities. It requires no comment.

SECT. IX.—HOW TO JUDGE BEFOREHAND OF A FUTURE CRISIS.

If the paroxysms increase in violence, occur earlier, and become much stronger; if they invade on the third day; and if symptoms of concoction appear in the urine, alvine discharges, and sputa, the disease will certainly soon come to a crisis. If the attack is slow, and if the paroxysms occur at the same hour every day, you may expect that the crisis will not take place till after a longer time. And those fevers which make their attack with rigors cannot terminate until the rigor abate; for until that occur it is impossible for the disease to have attained its acme, and therefore much less is it reasonable to expect that it is upon the decline.

COMMENTARY. This Section is copied from Oribasius. (Synops. vi, 3.) The subject is fully treated of by Galen (de Crisibus.) Rhases describes very accurately the symptoms of an approaching crisis, such as, confusion of the understanding, vertigo, headach, inquietude, involuntary flow of tears, pain of the stomach, &c. He warns the inexperienced not to be alarmed at the violence of the precursory symptoms. (x, 26.) Avicenna, Averrhoes, Haly Abbas, and Alsaharavius, though they treat of the subject very fully, supply no original views. COMM.

See an ample account of the ancient opinions in Prosper Alpinus. (De Præs. Vita et Morte ægrot. vi.)

SECT. X.—HOW TO RECOGNIZE A PRESENT CRISIS.

Restlessness precedes every crisis, and if the crisis be to take place by day, it will occur by night; or if the crisis be to take place during the night, it will occur by day; and then certain symptoms supervene, such as headach not previously occurring, sympathetic pain of the neck, retraction of the hypochondrium, sudden difficulty of breathing, and other dangerous symptoms which did not manifest themselves before then take place. And if, when these occur, the pulse, instead of sinking, is increased in magnitude and becomes stronger, and the critical day approaches, and if it be one of the favorable, you may not only anticipate a crisis, but also a good one. And be not then alarmed if you see the patient become delirious and disturbed, for these are indications of the humours being carried upwards; in like manner as certain other symptoms indicate their being determined downwards, such as pain of the belly, gripes about the navel, pain in the loins, borborygmi, and other similar symptoms, when they occur. In addition to these, if the patient was accustomed to have a hemorrhoidal discharge, and if the period of it be at hand, and in like manner with respect to the menstrual discharge (if the patient be a woman), it is not unlikely that the crisis may take place by such an evacuation. And a critical sweat is recognized by a precursory moistness of the skin (especially if occurring upon one of the days called indicatory), and by openness of the pores. From these you may recognize crises by evacuations upwards; for, in addition to the aforesaid,

you ought to examine the face of the patients, and whether there be palpitation in any part, or throbbing of the temporal arteries; or if the cheek, nose, or eye be redder than usual, you ought the rather to anticipate the coming crisis. But if they shed tears involuntarily, or fancy that they see sparks of light, and constantly carry their hands to their nose as if to rub it, then indeed you may see not only an approaching but a present flow of blood; for when they rub it once or twice the blood straightway breaks forth. Pungent pain at the stomach, and trembling of the under-lip often indicate a crisis by vomiting. These considerations are sufficient, but to them may be joined the age and constitution of the patient, as strengthening the anticipation; to which may be added, the season of the year and the present constitution. For if the patient be a child, or otherwise by nature warm and full of blood, you may still more form this anticipation; or if formerly, when in health or disease, as we remarked before, an evacuation of blood appeared, this circumstance alone may be sufficient to make you expect a hemorrhagy. And if the season of the year be summer, or, if not summer, if the present state of the weather be hot, and if the patient had often experienced a crisis at that season by hemorrhage, if the body be plethoric, if there is retention of the customary evacuations, all these things ought to strengthen your expectations. In like manner you ought to judge of the other evacuations; or, if none of these symptoms should appear, but if there be uneasiness occurring on one of the critical days after the 20th; or if, when the disease is at its acme, pains should seize certain joints, or near the ears, or in other parts; or if not pains, but local sweats should occur unceasingly in any part of the body, then indeed you may expect a crisis to take place by abscess, and in that part where the sweats, pains, or swelling occurred.

COMM. COMMENTARY. This is taken with very slight alterations from Galen (Therap. ad Glauc. i: see also, de Crisibus, iii, 2.) The critical evacuations enumerated by Galen are, those by vomiting, by the belly, by urine, by sweats, by hemorrhage from the nose, by hemorrhoids, by the menses in women, by abscesses of the parotid glands, and by determination to the knees, feet, or some other parts not vital. He says there are three ways in which

a fever may terminate favorably, namely, by an evacuation, by an imperfect crisis without an evacuation, and by resolution, that is to say, when the febrile symptoms go off gradually. There are likewise three unfortunate terminations; for the patient may die suddenly with much agitation, or in consequence of a metastasis, or he may be slowly wasted by a marasmus. COMM.

Averrhoes enumerates the same kinds of critical evacuation as Galen, and otherwise treats of them very judiciously. (Collig. iv, 39.) Avicenna gives a long account of all the circumstances attending the crisis, but he copies closely from Galen and Hippocrates. (iv, 2, 1.) Haly Abbas, in like manner, is sensible and correct, but borrows from the Greeks. (Theor. x, 10.) The account given by Rhases is excellent, but it differs little from our author's. (Ad Mansor. x, 27.) In his 'Continens,' he gives a full exposition of the Galenic doctrines, with his own Commentaries. He states, that a crisis may take place in six ways: by hemorrhage at the nose, by an alvine evacuation, by vomiting, by a discharge of urine, by a sweat, or by an aposteme. (xxxi.)

SECT. XI.—HOW TO DETERMINE WHETHER A PAST CRISIS BE FAVORABLE.

If a proper evacuation takes place after the concoction, and the fever is resolved by the critical evacuation; if the patient is freed from all other symptoms; if his colour has improved in proportion to the evacuation; if his pulse has become more regular, and his strength better in rising out of bed; and, what is the most salutary symptom of all, if these are accompanied by repose of the constitution, this may be pronounced to be the best possible crisis. If any of these be wanting, the goodness of the crisis will diminish proportionally to the force of the diminution.

COMMENTARY. This requires no Commentary. See, however, more fully, Galen and Rhases (l. c.) COMM.

SECT. XII.—ON THE PULSE, FROM THE WORKS OF GALEN.

The pulse is a movement of the heart and arteries, taking place by a diastole and systole. Its object is twofold; for, by the diastole, which is, as it were, an unfolding and expansion of the artery, the cold air enters, ventilating and resuscitating the animal vigour, and hence the formation of the vital spirits; and by the systole, which is, as it were, a falling down and contraction of the circumference of the artery towards the centre, the evacuation of the fuliginous superfluities is effected. The arteries themselves are oblong hollow vessels like the veins, but consist of two coats, in order to fit them for the afore-mentioned motion, and because they have to contain blood and spirits. They arise from the heart, and are distributed to all parts of the body; and, therefore, all the arteries pulsate in a similar manner, and like the heart, so that from one of them you may judge concerning all the rest. But the movement of all cannot be equally well observed; for those which are situated in parts not fleshy may be more conveniently felt, whereas those that are in fleshy parts are more indistinct. Nor is any one more conveniently situated for being felt than the one at the wrist. The first kind of pulses is in regard to the time of their motion, as observed in systole and diastole. Its differences are, the *quick*, *slow*, and *moderate*; because every body which is moved must be moved quickly, slowly, or intermediately, as to time; that is quick which is moved over a great distance in a short time; that is slow which is moved over a short distance in a long time; and that is moderate which is intermediate as to motion. The second kind of pulses is in regard to the extent of the diastole. For, since every body has three dimensions, length, breadth, and depth, and an artery is a body, it follows, that an artery must have these dimensions. When, therefore, an animal is in its natural state, you will find its arteries dilated moderately every way; but when not in its natural state, its dilatation will be deficient, or exceed according to some one of its dimensions. In calculating this, you must remember the natural state of the pulse; and if it is found to exceed in breadth, you must call it *broad*; if in length, *long*; and if in depth, *high* or *deep*. It is clear that the opposites to these, or those that are deficient,

are to be named the *narrow*, the *short*, and the *low*. And with regard to those which are altered from the natural state in all their dimensions, that which is every way diminished is called *small*, and that which is every way increased, *great*. The third kind of pulses is with regard to the tone of the vital strength. The varieties are three, the *strong*, the *weak*, and the *moderate*. The strong is that which strikes the finger of the physician strongly, and the weak, feebly and faintly; while the moderate is intermediate between them, and is held by some to be the natural one; for that the pulse is rendered stronger by passion and baths, not being naturally so. In reply to which, Galen contends that a pulse rendered stronger by non-natural causes soon undergoes a change; and that, therefore, a strong pulse, which does not readily change, may be natural and moderate. The fourth kind is in regard to the consistence of the instrument, I mean the body of the artery. In this respect there are three differences; for the artery is either harder than natural, and is called a *hard* pulse; or softer, and is called a *soft*, or intermediate, and is called in this respect *moderate*. The fifth kind is in regard to the contents of the artery; and their differences are, the *full*, the *empty*, and the *moderate*, since every vessel must be full, empty, or moderately full of liquids. A full pulse, then, as Archigenes defines it, is one which indicates an artery that is completely full, and the impression of which is, that it is distended with fluids; and an empty one conveys an impression as if its contents were full of bubbles of air, so that the finger, when pressed upon it, seems to fall into an empty space. These five kinds of pulses regard one motion of the artery. And since the quality of the heat in the heart may be more developed than usual in the artery, some have hence reckoned a sixth kind of pulses. Of the other kinds, whether they are in regard to one or more pulsations, they derive their character either from the time of rest, or the rhythm, or their equality and inequality, or their regularity and irregularity. The kind, then, in regard to the time of rest, which is the seventh in order, is divided into the *dense*, the *rare*, and the *moderate*. And, since an artery has a double motion, composed of two opposite movements, it must of necessity have two seasons of rest: the one after the diastole before the systole, the other after the systole before the diastole, which to most people appears imperceptible;

and, therefore, the interval of rest between two motions has been chosen. When, therefore, there is a long interval of rest, the pulse is called *rare;* when short, *dense;* and when intermediate, *moderate.* The eighth kind is in respect to rhythm. Rhythm, then, in general, is the ratio and proportion of one time to another. In regard to the pulse, it is, according to some, the ratio of the time of motion to the time of rest, as of the systole and diastole, to the intermediate time of rest; but, according to others, it is the ratio of a time of motion and rest to another time of motion and rest, or of motion to motion.

Of rhythm, then, there are two varieties, the rhythmic and the arhythmic. Of the arhythmic, there is a threefold difference: first, when there is a slight departure from rhythm; second, when there is a greater; and third, when there is no rhythm at all. Thus, for example; in a child, if his pulse has the rhythm of childhood, it is called its proper rhythm; if it has that of an adult, it is said to be an improper rhythm; or if it preserve no ratio at all, it is said to be devoid of rhythm.

The ninth kind of pulses is found in all the other kinds already mentioned; namely, that which regards equality and inequality, which may be remarked either in one pulse, or in many, which last is called the systematic, of which we must speak first, as being more clear. An *equal* pulse, then, is that which is alike in order, as regards magnitude, strength, frequency, and certain other, or indeed all its other, characters. The *unequal* pulse is that which is unlike in order. For, if all are alike, as, for example, all deficient in magnitude, such a pulse is called equal. But if the first, second, and third appear alike, but the fourth unlike, it is clear that such a pulse is *unequal* as to magnitude. Of this kind are the *intermitting* and the *intercurrent.* For not only after one or more great pulsations may one smaller occur; but sometimes this motion is wholly lost, and one pulsation is said to be wanting. The other kind, the intercurrent, is the opposite to this; for when we are expecting an interval of rest, a supernumerary pulsation, as it were, occurs. When the second is a little smaller than the first, and the third than the second, and the fourth than the third in like manner, and so onwards, such pulses are called *sharp-tailed* or *myuri,* deriving their names from figures terminating in a sharp point. Such as are altogether diminished, and never cease from this state, terminate

in a total loss of motion, and are called *failing* or *fainting myuri*. There are two varieties in respect to those which fail, for some of them persevere in that state of smallness in which they terminated, whilst others attain again their original magnitude, or less or more, and these are called *recurrent myuri*. Pulses also are called myuri, from their inequality in regard to one pulsation, concerning which we will speak presently. And this is the nature of that inequality of pulse, called systematic. But it takes place with regard to one pulse, or one part of an artery, or more, as perhaps with regard to motion, for the inequality is observed on one part of the artery, when the motion of the artery upon the finger begins one way and terminates another, beginning quicker, and terminating slower, or reversely. This happens in a threefold manner, the motion either remaining constant, or being interrupted, or recurring and beating double, as it were. If, then, remaining constant and uninterrupted, it should change from quickness to slowness, or conversely, such a pulse is said to be, and is of unequal velocity. But if, after being interrupted by an interval of rest, it again appear quicker, it is called the *goat-leap* or *dorcadissans*, the term being derived from the animal *dorcas*, which, in jumping aloft, stops in the air, and then, unexpectedly, takes another and a swifter spring than the former. But if after the diastole it recur, and before a complete systole take place, strike the finger a second time, such a pulse is called a *reverberating* one, or *dicrotos*, from its beating twice. You may see such a thing take place upon a stithy, when a hammer, swung by the hand, first strikes the stithy, and afterwards, recoiling from the reaction of the stithy, strikes of itself a second or third time. And not only may an inequality in the time of motion take place as to one pulsation in one part of an artery, but also in regard to the strength of the power; not so, however, in regard to the extent of dilatation (for it is impossible that the same pulse in the same place should be great and small at the same time), nor in regard to the other kinds of pulses. But in different places different parts of an artery may exhibit a double inequality in one pulsation. For the motion may continue constant, and be swifter at one finger and slower at another; or it may intermit, and one finger may perceive it, and another not. And also, in regard to the extent of the diastole, the same inequality becomes

apparent in different places. Of this kind are the myuri, diminishing once and again at one pulsation; for, if at the inner finger the pulse should be great and swelled up, but under the external at the thumb of the patient it appear smaller, such a pulse is called myurus, from its resemblance to the tail of a mouse; or meiurus, from its being diminished like a tail. But if the pulse appear great, and swelled under the middle finger, but smaller on each side, Archigenes called this impulse *innuens et circumnuens*, i.e. *the declining, and the declining on both hands*, wishing to mark the smallness of the diastole, with the declination, as it were, of the two extremities; for these parts do not appear as if they were cut short, but as if they were bent in, and a little contracted on each side, and hence the pulse is curtailed (myurus) on both sides.

And when the inequality as to magnitude takes place at different times, such pulses become *undulatory* and *vermicular*. And if irregularity of position be joined to them, they are called *spasmodic* and *vibratory*. Let us begin with the undulatory, in which the whole artery is not dilated at the same time, according to the same inequality, but this part of it first, that second, that third, and that fourth, the motion continuing constant like the swelling of the waves. And some have the wave carried straight forward, some obliquely; some have a sufficient altitude in a short expansion as to length, and some conversely; some have a broad, and some a narrow, and they have the like inequality in regard to quickness and strength. When the undulatory is wholly diminished in size, it is called the vermicular, which resembles the motion of a worm. As the undulatory pulse, when it goes on diminishing, terminates in the vermicular, so in like manner does the vermicular in the *ant-like*, or *formicans*, when, most of its motions being lost, it terminates in one, and it a very small motion. It is called *formicans* from its resemblance to the ant (*formica*), on account of its smallness and kind of motion. The *ant-like* pulse (called formicans) is very small, there being none smaller than it; and, in like manner, it is of all others the most indistinct and dense, but is not quick, as Archigenes supposed. Nearly allied to it is the *hectic*. For as there is a hectic fever, so is there also a hectic pulse, which undergoes little or no variation, but remains always alike contracted as it first began, and never expanding, the whole habit being turned

into disease. The *spasmodic* pulses appear as if they were dragged, stretched, and drawn by the extremities, conveying the sensation of a stretched cord. But no such thing takes place in the *vibratory;* for in them the dilatation is greater, as if different parts of the artery were carried upwards at one and the same time. They may be resembled to darts, which, when thrown with force, are carried along with a vibratory motion. The pulse is *serrated* when part of the artery seems to be dilated and part not; the artery itself also appearing to be harder than natural. This pulse has some of the characters of the vibratory, and is quick and dense, but not always great. In addition to those mentioned, there is a tenth kind of pulses arising from inequality, namely, that with regard to regularity and irregularity. The unequal pulses being divided into those which are alike as to periods, and those which are wholly unlike, the regular and irregular are formed according to each of these divisions; from the equality of periods the *regular* is formed, and from the entire inequality the *irregular*. The equal pulse is also always regular (since consequently we call it alike); but the unequal is not altogether irregular; for, supposing it to have no equality, and yet to preserve a certain period, such, for example, as to extent of diastole, if there are two great and one small, then again two great and one small, and so on successively, such a pulse would be called anomalous, that is to say, unequal, but regular. But, if it not only had no equality, but likewise no order in its inequality, such a pulse would be not only unequal, but also irregular, and in like manner with regard to the other kinds. Of the irregular, some are altogether so, observing no period whatever; others are indeed regular as to periods, but, having no continued order, they may in this respect be called irregular, but in so far they observe a certain period regularly, they being regulated as to their periods. As if, for example, there were two great and two small, then three great and three small, and four great and an equal number small; and, returning again, two great and two small, three great and as many small, and so on in like manner. It is to be remarked that, of all the other opposite kinds, there is one intermediate between the two extremes, but that there is none between the equal and unequal, and the regular and irregular, unless you choose to call the one which is regular as to periods the medium between

the regular and irregular. And the intermediate pulses of all the other kinds are the natural, except that which relates to strength and weakness, as we showed. But, in those we have been describing, the equal alone is the natural, and all the others are not natural, namely, the unequal, the regular, and the irregular. These are all the kinds of pulses and their generic differences. Some add two others to these, the one in regard to the position of the artery, according as it seems to be carried upwards or downwards, to the right or to the left, and the other in regard to the times of expansion. But these we treated of along with the undulatory and vibratory. And we, for the sake of brevity, have only delivered the simple varieties; but, from what has been said, one may easily connect them, and discover those which arise from their combinations.

The causes affecting the pulses are next to be treated of, with which is connected the prognosis from them. We shall begin with those which respect magnitude, because it is more obvious than the others. A great pulse is produced either by some urgent necessity, such as an excess of heat in the heart requiring refrigeration, and, as it were, ventilation from without; or it may arise from leanness of the body, as we shall soon show. The excess of heat is occasioned either by natural causes, such as the ages of manhood and youth, or simply a hot season, place, or a warmer temperament,; or by non-natural causes, such as the air which surrounds us being hotter than common, hot baths, exercises, food, wine, heating medicines; or by preternatural causes, such as a hot intemperament, putrefaction of the fluids, passion, or the like. You may judge of these classes of pulse from the following observations. Those which are natural are permanent and not very susceptible of change, whilst the others readily change, so that often while you examine them, or generally after a very short time, they will altogether alter. A pulse also which owes its greatness to a hot bath has softness for an accompaniment; and hardness is generally combined with greatness proceeding from a hot intemperament, especially when combined with dryness of the system. Those who have undergone moderate friction or exercise have a pulse intermediate between hardness and softness; but they have the parts about the chest warmer than natural, which is the case also with those in a passion. Those that are influenced by food, the use of

wine, or rage, have vehemence joined to greatness. Those who wish to conceal anger, or something which they have done without permission of the physician, (such as if a person has taken a heating medicine, and wishes to conceal it from the physician, who inquires about it while he feels the pulse,) in such persons a manifest inequality is joined to greatness. To the discovery of this state other considerations may contribute, such as the habit of the patient, as if he appeared to be fond of taking medicines, or his disposition, as if it be bad, and cunning at concealments. A pulse which is great from putrefaction of the fluids has a contraction more hasty than natural joined to its greatness. To form a great pulse, an urgent necessity is not alone sufficient; but the vital powers must also contribute, and a condition of the instrument or artery intermediate between hardness and softness. When the heat, therefore, is increased in the heart by any of the above-mentioned causes, in the first place the pulse becomes great, and, the greatness not being able to supply the want, quickness is straightway joined to it; and if that is not sufficient, density is superadded. Small, slow, and rare pulses are formed by the opposite causes. But when a change first takes place from a great, quick, and dense pulse to their opposites, namely, when the necessity is at an end, the first character of the pulse is not the first that leaves it, but it loses first that which it last acquired, becoming first rare, then slow and last small. But if the slowness and smallness should go on increasing, the rarity will again change to density, in order that the necessary want may be supplied. Such are the causes of greatness, quickness, density, and their opposite pulses. To these we shall connect the alteration of the pulse in regard to one dimension only. Breadth alone then is increased, principally by a redundancy of humidity, either natural, or from external causes, as loftiness is occasioned by the softness of the instrument, assisted by the vital power; but length is rendered apparent by the dryness and melting of the surrounding flesh, the other dimensions being contracted. For an artery cannot, in fact, become longer than natural; and this ought more properly to be called *the lean* pulse, as the opposite one, namely, that which is increased only in breadth and depth, should be called *the fat*. The pulse sometimes falls under the opposite characters to this, when it is restrained as to any of its dimen-

sions, and appears low, narrow, and short, when it is not so in reality, but seems so, owing to the thickness of the fat, flesh, or membranes which press upon it. Sometimes, too, the whole seems small, when it is not so in reality; and feeble in like manner. And what do I say? Sometimes an asphyxy, or complete loss of pulsation, hath seemed to take place over the whole arteries, when there is no such thing in reality; and this has happened, more especially to those who have felt them carelessly, when the motion, being really indistinct, escapes notice, owing to the quantity of flesh; for it is impossible that a complete asphyxy could take place while the man is alive. In like manner again in the emaciated, small pulses appear great. When, therefore, the body is greatly wasted, the artery which runs along the spine has often been felt by persons touching the abdomen, and also the pulses in members which before used not to be felt. Wherefore we must attend to all circumstances, that we may not be mistaken in our diagnosis. A strong pulse is occasioned by the force of the natural faculty, when not counteracted by any other cause, such as the want failing, or from hardness of the instrument. But a feeble pulse may arise from weakness of the natural powers alone, although no other causes contribute. For a strong pulse stands in need of all the other causes for its formation; but the feeble is produced by weakness alone. The originally strong pulse accompanies moderate ages, seasons, places, and temperaments; but the feeble the immoderate. A pulse changing from feebleness to strength is formed by the vital faculty growing strong, from a preceding state of debility. It is strengthened either by things within the body, such as concoction of the fluids, or an excretion of them, or passion; or by externals, such as wines, food, exercises, and whatever will rectify the intemperament. The natural powers are weakened by want of food, watchfulness, immoderate evacuations, grief, cares, and more especially pains inducing syncope, and whatever forms an intemperament. Some inexperienced persons have thought a hard pulse strong, but a person of experienced understanding and touch will not mistake them; for a strong pulse, being mostly accompanied with greatness, is swelled up to loftiness and strikes the finger forcibly; but the hard does not admit of greatness, on account of the unyielding state of the artery. Wherefore a pulse becomes hard owing to

the hardness of the artery. This is occasioned by immoderate cold, or dryness, or tension proceeding from inflammation, or spasm. To the hardness, moreover, are joined smallness, quickness, and sometimes density instead of greatness accompanying, owing to the exciting want. A soft pulse follows a humid state of the artery. An artery is rendered more humid by things not preternatural, such as more liquid food, immoderate baths, much sleep, a more abundant diet, and hilarity; and by preternatural causes, such as coma, lethargy, dropsy, and the other pituitous affections. A full pulse indicates an abundance of fluids, or plethora from food, or from drinking wine, as the empty, on the other hand, indicates deficiency of food or evacuation. When the body of the artery feels warmer under the finger, this indicates great heat in the heart, while the rest of the body is cold, or a certain spasmodic state of the arteries, which are warmed by the violent motion. Archigenes says that the place of the artery will particularly be found warmer in catochus and in those who are about to be affected with somnolency. With regard to rhythm, when the ratio of the times of motion and rest is equal, it indicates a proper temperament of the body, or no great departure from it, as in early age, and the otherwise well-regulated bodies. But when the time of rest is greater than that of motion, this indicates that heat prevails, as in adults and those of the adjoining ages; as, in aged bodies, which are entirely cold, the time of motion is greater than that of rest. It is to be remarked that inequality in regard to rhythm, being the measure of that as to quickness and density, this holds the place as it were of the *materiel* to the rhythm.

The intermittent and intercurrent pulses take place when the powers are oppressed, and, as it were, borne down; but the intercurrent indicates a lesser, and the intermittent a greater injury. And, in general, that state in which the powers are oppressed and borne down, changes the pulses to inequality and irregularity in every other respect, and also in regard to strength and greatness. The pulses called myuri, being shown to be of two kinds, (for they are found either in that inequality called systematic, or in regard to one pulsation), the *failing* or *fainting* evince the last prostration of the powers; but, when they return, or are *recurrent*, they indicate that the powers are weak, but that they are struggling, contending, and have not yet submitted.

As to the myuri, in regard to one pulsation, called *the failing,* and *the failing on both hands* (innuentes et circumnuentes), these happen to persons who are gradually wasted by inflammations not yet resolved, and to those who are wasted from whatever cause, the bodies around the arteries being melted down. Pulses of unequal velocity, and those called *dorcadissantes* or *goat-leap,* principally accompany febrile heat. But if the pulse render the commencement of the diastole feeble, and increase in velocity towards the end and beginning of the systole, this indicates that putrefaction is prevailing, nature hastening on the discharge of the fuliginous superfluities. But if, on the other hand, it render the commencement of the systole feeble, and rather make speed towards the diastole, you may be sure that the heat is prevailing, and longing for refrigeration. These in fever are, for the most part, accompanied by density, and sometimes greatness, if the powers be not restrained by the hardness of the instrument. When the hardness of the artery increases, and the powers are not weakened, *the double* or *reverberating* pulse is formed. The *undulatory* pulse most commonly attends the more humid affections, such in particular as anasarcous swellings, lethargy, and peripneumony. When the powers of life are beginning to fail, but are still making a faint struggle, the undulatory pulse sinks into the *vermicular;* but when they decline to their lowest ebb, this last passes into the *ant-like* or *formicans.* The hectic particularly attends those in consumption and marasmus. The spasmodic pulse takes place when the origin of the nerves is suffering from some inflammatory affection, as in frenzy and acute attacks of epilepsy, when those affected with them die while they are yet warm, contrariwise to those in syncope, for they are alive after they have become cold. The *clonodic* or *vibratory* pulse takes place when the wants of the system require a great diastole, and the vital powers are sufficient for that purpose, but are opposed by the body of the artery; which, from its hardness, cannot be expanded to a large diastole, as happens in great inflammations and chronic obstructions. The *serrated* pulse is indicative of inflammation, and particularly in some tendinous parts. It is no less so of pleurisy, and when slight, indicates that the inflammation is gentle, and easily to be concocted; but when intense, that it is severe and of difficult concoction, and will be attended with

urgent danger, if the powers be weak, or, if they be strong, that it will be slowly concocted, for it will either terminate in empyema, or a consumptive marasmus will supervene. One ought also to know that irregularity of the pulse commonly accompanies its inequalities; for you will rarely find an unequal pulse orderly. Wherefore, the lesser constitutional injuries occasion unequal and regular pulses, but the greater, unequal and irregular.

These are the simple causes of the pulses and their prognosis, and from them the compound, as we stated when treating of their differences, may easily be discovered.

COMMENTARY. The ancient authorities on the pulse are the following: Celsus (iii, 6); Galen (Libel. de Pulsi. ad Tirones; de different. Puls., de Dignos. Puls., de Caus. Puls., de Præsag. ex Puls., Synopsis librorum de Puls.); Philaretus (de Pulsu); Theophilus Protospatharius (de Pulsibus ap. Ermerins Anecd. Med. Gr.); Actuarius (de Diagnosi); Avicenna (i, 2, 3); Averrhoes (Collig. iv, 16); Haly Abbas (Theor. vii); Alsaharavius (Theor. vii); Rhases (ad Mansor. x, 32; Contin. xxxi); Psellus (Opus Medicum apud Boissonade, Anecdota Græca.) COMM.

Prosper Alpinus gives an excellent exposition of the ancient doctrines on the pulse (de præs. Vit. et Morte ægrot. iv, 3); Le Clerc's account is not so accurate (Hist. de la Méd.) Wetsch's is tolerably correct (de Pulsu.)

Hippocrates, although Galen affirms that he was not entirely unacquainted with the pulse, does not appear to have attached much importance to the observation of it, for he generally neglects to mention its characters, where we would most expect to find them stated, as, for example, when he is detailing the symptoms of epidemical fevers. Celsus, too, expresses himself in doubtful terms respecting the indications furnished by the pulse: "Venis enim maxime credimus, fallacissimæ rei; quia sæpe istæ leniores, celeriores ve sunt, et ætate, et sexu, et corporum naturâ; et plerumque satis sano corpore, si stomachus infirmus est, nonnunquam etiam incipiente febre, subeunt et quiescunt; ut imbecillus is videri possit, cui facile laturo gravis instat accessio. Contra sæpe eas concitat et resolvit sol, et balneum, et exercitatio, et metus, et ira, et quilibet alius animi affectus." Aretæus and Cælius Aurelianus are indeed sufficiently minute and accurate in detailing the characters of the pulse, while describing the

COMM. symptoms of various diseases, but neither of them has written expressly on the subject; and, as the works of Herophilus, Agathinus, Magnus, Athenæus, and Archigenes are entirely lost, Galen must be considered as our first and great authority on the pulse—we might almost have said our sole authority, for all subsequent writers were content to adopt his system, without the slightest alteration. As our author's account of the subject is professedly taken from the elaborate treatises of Galen, it may, perhaps, appear unnecessary to attempt any further exposition of the system; but the importance of the subject, and, we may add, its novelty to modern readers, have induced us to make some detached observations upon it, in order to explain some parts of it which are confessedly obscure, and to answer certain objections which have been stated against it, by modern writers who have not properly understood its principles.

We shall first notice the objection stated to Galen's Theory of Respiration by Van Helmont, who, although compelled to admit the ingenuity of Galen's system, pretends to differ from him respecting the final cause of arterial action and respiration, which, he maintains, is not refrigeration, but the maintenance of animal heat. (Opera, p. 112.) But if he had read Galen's work 'de Usu Respirationis' carefully, he would have found that this is the very sense which Galen attaches to the terms refrigeration and ventilation. Van Helmont states, as a new discovery, that a sort of concoction of the blood takes place in the left ventricle of the heart. But he might have found this doctrine also in the works of Galen.

According to Galen, the pulse consists of four parts: of a diastole and a systole with two intervals of rest, one after the diastole before the systole, and the other after the systole before the diastole. He maintains that by practice and attention all these parts can be distinguished. (De Dignos. Puls. iii, 3.)

The first distinctions of the pulse are derived from the extent of the diastole, according to its three dimensions, namely, length, breadth, and depth. These give rise to the characters *long*, *broad*, and *deep* or *high*. Le Clerc renders the last by *élevé*. A long pulse, of course, refers solely to the impression on the finger, as in reality one pulse cannot properly be said to be longer than another; but when a person is lean a larger portion of the artery can be felt under the finger than when he is fat.

The character *deep* or *high* is easily understood, and is evi- Comm.
dently produced by a free dilatation of the artery. It does not indeed appear evident how there can be a difference between a *deep* and a *broad* pulse, if the dilatation of an artery were equal on all sides; but Galen positively affirms that it is a fact ascertained by ample experience, that sometimes there is a free dilatation of the artery upwards with a contracted one laterally, constituting a *high* and *narrow* pulse; and, on the other hand, that there is often a free dilatation laterally with a contracted one upwards, constituting a *low* and *broad* pulse. He gives directions for detecting these peculiarities of the artery. (De Diff. Puls. iii, 2.)

The characters of *quick* and *slow* are derived from the length of time occupied in the actions of systole and diastole. They seem to be sufficiently well marked, and yet Fyens denied that there is any difference between *frequency* and *quickness*. However, many of our late authorities in medicine acknowledge a distinction between these two characters, and they appear to us sufficiently obvious. In fact, Galen establishes the distinction in the most satisfactory manner. (De Dignos. ii.)

The distinctions of *strong* and *feeble* are derived from the force with which the artery strikes the finger. No one can possibly mistake them.

The relaxation and constriction of the arterial tube give rise to the characters of *soft* and *hard*, which are so obvious that they cannot be misunderstood. The character of *hardness* is called *tension* by Galen, who states that it is characteristic of inflammation.

The next class of pulses derive their characters from the time which elapses between two diastoles or pulsations of the artery. They are called *dense* and *rare*, in the ancient system, being used in the same sense that *frequent* and *slow* are in modern works.

The terms *equal* and *unequal* (or, as they might have been translated, *equable* and *unequable*) arise from the constancy or inconstancy of any peculiar character of the arterial pulsation. The *regular* and *irregular* are distinguished from these, inasmuch as a series of pulsations, although unequal may be regular, when they observe a certain ratio, as when four strong pulsations are succeeded by a feeble one, and this series goes on successively.

COMM. An inequality may take place in respect to one pulsation; for the dilatation of the artery may be interrupted, and then completed, when it is called *dorcadissans, caprizans* or *goat-leap;* or the stroke may be suddenly repeated, when it is called *dicrotos,* which may be translated the *double, reverberating,* or *rebounding* pulse. The term *dorcadissans* is derived from *dorcas,* an animal generally supposed to have been the goat, but it is now satisfactorily ascertained that it was the *antelope dorcas* or *gazelle;* and, in the Latin translations of Avicenna and Haly Abbas, it is rendered *gazellans.* It is said that when this animal leaps upwards it at first takes a short spring, then seems to make a sudden stop, and afterwards takes a much larger and swifter bound. This character was applied to the pulse when an imperfect dilatation of the artery is succeeded by a fuller and a stronger one. (Galen, de diff. Puls. i, 28.) It is thus described by Haly Abbas: "Gazellans pulsus est qui cum a celeritate incipiat antequam percussiat stat, dehinc velociter movetur: vocatur autem hujusmodi gazelenus suâ ex similitudine caprioli saltu: quum capriolus quem Gazel Arabicè vocant cum saltum dederit pedes tollit et suspensus pauco videtur tempore atque sic ad terram velociùs redit." The translator of Alsaharavius renders it by *fusalis.* It is correctly stated by Fouquet that the second pulsation is necessarily larger than the first. The *dicrotos* consists of two pulsations, following upon one another so rapidly as to form, as it were, but one beat of the artery. In the translation of Alsaharavius it is called *mallearis,* and is thus defined: "Est autem pulsus mallearis qui percutit manum et recedit, deinde redit et percutit secundario."

When there is a succession of pulsations which diminish in magnitude regularly, such a system of pulses is called myuri, that is to say, *decurtate* or *sharp-tailed,* from their supposed resemblance to the tapering tail of a mouse. Those who are acquainted with the Scholiast on Hephæstion, and the other ancient writers on prosody, will readily recognize a term with which they are familar. Galen inclines to the opinion that this state of the artery is connected with an intemperament of the portion where the expansion is limited. Of these pulses, some end in complete asphyxia, and hence are called *swooning, failing,* or *fainting* myuri, (Le Clerc renders it by *le myurus*

defaillant;) and others again gradually recover their former magnitude, and are called *recurrent myuri.* Nearly allied to these are the *innuentes et circumnuentes,* for which it is scarcely possible to find any appropriate term in English. Le Clerc thus renders and explains this pulse, in French: "Le myurus *qui va en baissant de côté et d'autre,* c'est a dire qui frappe moins sensiblement le premier et le dernier doigt que celui ou ceux du milieu." It consists, as Avicenna explains, of a double myurus, which swells out in the middle, and diminishes at both extremities. It was therefore a sort of double inclined plane. The myurus, and the innuens et circumnuens, are thus described by Haly Abbas: "Est autem et in hac specie unius pulsationis pulsus qui *muris cauda* appellatur; quique inclinus vocatur pulsus. Et qui muris cauda vocatur fit cum arteria dilatatur sub primo digito qui a superioribus est grossa, et sub secundo minus grossa, sub tertio parva, sub quarto minima. *Inclinus* autem pulsus est qui sub duobus mediis movetur digitis grossus et sub extremis hinc et inde subtilis et tenuis; aut medium ejus elatum est, et extremitates demissæ, videturque tangenti arteriæ extrema ad inferiora declinari." Sprengel appears to think that the *pulsus inclinus* of Haly Abbas is one first described by him, but there can be no doubt of its being identical with the *innuens et circumnuens* (*νενευκὼς και περινενευκὼς*) of Galen's system. It is likewise the same as the *pulsus inclinatus* of Rhases, who says it occurs in hectic fevers and consumption. Galen attempts to explain this pulse by referring it to weakness of the vessel and an unequal wasting of the parts around, which convey the impression, when several fingers are applied together, as if the vessel swelled out in the middle. (De Diff. Puls. ii.) COMM.

In the *spasmodic* pulse, the artery is said to convey the sensation of a string or cord tightly stretched, which, when touched, starts from its place. It seems to be the *pulsus tortuosus* of Alsaharavius, and is commonly met with when convulsions are impending.

The *vibratory* derives its name from an imaginary resemblance to the motions of a rod or dart when thrown into the air, and it can only take place when the artery is hard, and the strength good. Le Clerc renders it *le pouls dardant.* It is generally named *thrilling* in modern works. According

COMM. to Actuarius, it is hard, quick, and dense, and indicates inflammation of nervous parts.

The *undulatory* derives its name from a supposed resemblance to the rolling of the waves, and can only take place when the artery is particularly soft, being accompanied with an unequal elevation of it in the diastole. It is thus described by Rhases: "Undosus vero est qui secundum latitudinem, magnum digiti occupat locum, cum lenitate et repletione, cum eo tamen non est magna elevatio neque subita, sed videtur quod elevationem ejus una post aliam contingit, donec fit ut undis assimilatur, quarum una aliam sequitur." It is the *pulsus fluctuosus* of Haly Abbas, and the *pulsus fluens* of C. Aurelianus. (Morb. Acut. ii, 32.) Le Clerc renders it *ondoyant*.

The *vermicular* differs from the last mentioned only in magnitude and strength, being soft, small, and weak. Nearly allied to it is the *formicans* or *ant-like* pulse, which is one of the last degree of weakness, smallness, and density. They are thus described by Rhases: "Vermicolosi forma est ut forma undosi, in elevatione quæ secundum diastolem eadem invenitur, non tamen est latus, neque plenus, cujus inundatio existit debilis, qui vermibus per foramen arteriæ discurrentibus assimulatur: formicans vero pulsus adeo invenitur in ultimo parvitatis, et spissitudinis consistere, ut pulsui pueri recens nati assimuletur." According to Galen the *formicans* is a pulse which it requires great experience to detect. (De Dignos. Puls. ii, 1.) Haly Abbas states that it is the termination of the vermicular. It is the *pulsus formicabilis* of Cælius Aurelianus. The Chinese compare the formicans to a silk thread, a capillary tube, or a hair.

The *intermittent* and *intercurrent* pulses are opposed to one another, there being a complete failure of a pulsation in the one case, and an accessory or superfluous one in the other. There cannot be a better proof of the imperfection in our modern systems of the pulse, than that there should be no mention in them of the intercurrent pulse.

The *hectic* pulse, it is well known, is small and dense. Alexander Trallian says, small and feeble. (xii, 4.)

The *serrated* is hard, quick, and unequal in its feel. Rhases says that it is principally observed in inflammations of the pleura and diaphragm. According to Actuarius, the pulse characteristic of inflammation is serrated and hard, more especially

if seated in a tendinous part. (Meth. Med. i, 25.) Le Clerc renders it *le pouls en manière de scie.* (Hist. de la Méd. p. iii, l. iii, c. 3.) It appears to correspond with the pulse called *harsh* in the works of English writers on medicine. COMM.

Bordeu speaks of the terms *formicans, myurus,* and *caprizans* as having been justly banished from our modern nomenclatures. But it may be doubted whether it be from superior information or from ignorance that we have rejected these nice distinctions. Some of these terms were in use long before the time of Galen, (he mentions that Herophilus used the term *dorcadissans,*) and for more than a thousand years afterwards the characters of the pulse to which they were applied were acknowledged as real; and, on a matter depending solely upon experience and observation, the concurring suffrages of so many ages must be admitted to be entitled to some consideration. That many of the Greek and Arabian physicians were men of great learning and of much practical skill in medicine cannot admit of a doubt; and therefore their opinions ought not to be hastily rejected as visionary and unfounded. Galen, indeed, expresses in strong terms the difficulty which he found in defining accurately the states of the artery to which the terms we are treating of are applied, and warns the reader that such characters are to be detected only by a person well experienced in the art of feeling pulses, which he pronounces to be one not easily attained. (Synops. viii.) Alsaharavius insists strongly on the necessity of having a nice sense of touch, and that it be well cultivated in order to attain the tact of feeling pulses properly. Haly Abbas and Actuarius in like manner state the difficulty and importance of the art of feeling pulses. It is to be borne in mind that the ancients performed the operation of feeling the pulse more methodically than is now generally done, which may in part account for our having lost sight of some of the nicer shades of distinction which they recognized. It is worthy of remark, further, that the truly learned and experienced Prosper Alpinus recognized and described these characters of the pulse which we have been treating of. (De pr. Vit. et Morte ægrot.)

Whoever will consult Galen's treatises on the pulse will find discussed in them many subtle questions which are now seldom thought of. For example, he enters into a disquisition whether or not we can perceive the systole of the artery. He informs

COMM. us that Agathinus had denied and Herophilus affirmed the possibility of this. He, after having, as he says, examined the matter fully, agrees with the latter. (De Dignosc. Puls. i, 3.)

Psellus gives the characters of the pulses in not inelegant politic verses. A very clear and satisfactory description of them is given in the short treatise of Theophilus Protospatharius.

The causes which produce all these varieties of pulse, and the changes of the system which they indicate, are, upon the whole, pretty clearly explained by our author; and the reader who wishes to consult other abridgments of the doctrines of Galen, may find them in the works of Rhases, Haly Abbas, and Actuarius. We shall merely make a few more remarks upon some of the more obscure and least understood parts of the system.

Respecting the myuri, Galen states that they all indicate a prostration of the vital powers, but differing in degree, according to circumstances. When the pulse gradually becomes smaller, and in like manner recovers its magnitude gradually, and so on alternately, so as to form the *recurrent myuri*, it indicates an inferior degree of prostration; and, when the diminished state of pulsation continues permanent, a greater degree of oppression is indicated. In the former case the powers of the system seem able to struggle against the load, but in the latter they are completely overcome. This state is next in danger to that of complete asphyxia. These three are the worst kinds of pulse. The *intermitting* is said by him to be allied to these, being indicative of great danger, though inferior to that of those we have mentioned. Next to the intermitting is the *intercurrent*, which indicates that the powers of the system are strong, but oppressed, and contending against some great load. Galen was particularly apprehensive of the *intermitting* pulse, which he held to indicate that the system is struggling against some urgent cause. He remarks, however, that, when the pulse is otherwise strong and frequent, it indicates less danger than when it is weak and slow. But, upon the whole, he considered this kind of pulse so full of danger, that he affirms he had never known a person recover whose pulse intermitted during the interval of two pulsations. When the pulse intermits during the space of only one pulsation or a little more, he says he had often seen the patient recover. He also states that an intermitting pulse is less dangerous in old persons than in adults or children. Some, he

says, affirm that they have seen cases of intermission which did not prove dangerous, but he believes that they had confounded rarity with intermission. The intermitting is to be distinguished from the rare by the length of the time of rest, and by the latter being often equable, whereas the former is always unequable. He says it is generally occasioned by frigidity of the heart. These doctrines may be traced through all the subsequent authorities, both Greek and Arabian, down to Actuarius. COMM.

Galen, Rhases, and Haly Abbas repeatedly inculcate that the undulatory pulse indicates an approaching crisis by a sweat. They describe it as being strong, full, soft, bounding, and unequable. According to Galen it is most commonly met with in lethargic affections, quotidian, marsh, and typhoid fevers. (De Præs. ii, 9.) It is also said to be common in sudden attacks of dropsy. (Ib.) In some instances, however, it is the precursor of some critical evacuation, such as that by the hemorrhoids, or by the bowels. (Synops. 22.) Actuarius particularly states that critical sweats are indicated by the undulatory pulse. (Meth. Med. ii, 2.)

The *dicrotos* is distinguished by a smaller pulsation suddenly succeeding to a larger one. Galen compares it to a hammer, which, when forcibly struck against the anvil, rebounds, and strikes it again. The artery in such cases is always strong and vibratory. Philaretus describes the pulsation as being hard, vehement, and rebounding. Galen says it can only occur when the powers of the system are strong, the artery hard, and the body oppressed with a redundance of humours. He repeatedly inculcates that it indicates an approaching crisis.

The singular pulse called *dorcadissans*, which we have translated *goat-leap*, is said by Galen to occur most frequently in affections of the heart and inflammations of the parts within the chest. (De Prognos. ii, 8.) It is the same as the pulse now called *jerking*, which the best authorities agree to be characteristic of pericarditis. In such cases, Hope says, the pulse is "full, hard, *jerking*, and often with a thrill." (Diseases of the Heart, p. 99.) We suspect the modern term *jerking*, although perfectly intelligible to one experienced in the art of feeling pulses with discrimination, will be found fully as difficult to define as the *dorcadissans* of the ancients.

The *vermicular* appears to have been the same as that which

COMM. is now sometimes denominated *creeping*. In fact, Galen derives its name from its resemblance to the motion of a creature *creeping*. (Synops. 22.) It is said by the ancient authorities to occur in cases of sudden prostration of the vital powers, produced by inordinate evacuations, such as hemorrhage, cholera, diarrhœa, and the like. (De Prognos. Puls. ii.)

The pulse called *innuens et circumnuens*, is said to occur only in cases of extreme debility and danger, more especially when attended with a great chill. It is connected, says Galen, with idiosyncrasy. (De Præs. ii, 11.) Is it the same as the pulse now named *flickering?*

Galen gives the following ingenious explanation why the pulse is contracted and frequent, in cases of acute inflammations. He remarks that, if a person have an inflammation in a limb, he will experience most ease in a state of complete rest; but if obliged, by some urgent necessity, to perform a journey, he will find that he can accomplish this most easily by taking short and frequent steps. In like manner, when any part is inflamed, it would afford most relief if the motion of the arteries could be altogether suspended for a time; but, as this cannot be, nature renders the dilatation as confined as possible, and makes up for its smallness by frequency. (De Usu Respirationis.)

SECT. XIII.—ON THE ALVINE DISCHARGES.

Of the alvine discharges, the best is that which is soft and compact, and is evacuated at the hour which is customary in health. Such excrement is yellowish, of the proper consistence, and not very fetid; for whatever is different from these is not good. That which resembles in colour the food which has been taken, or is thin, wants the natural juices, and is passed quickly, is indigested. But that which is intensely yellow, if evacuated in the beginning of a disease, indicates that the complaint is of a very bilious nature; but if after the acme, that the body is properly purged. The green is the sign of verdigris-green bile, but the black of black bile, or of adust blood mixed with it. The livid marks a coldness and considerable mortification of the internal parts. The oily is the mark of a melting of the fat in

the body; as the glutinous, which is worse than the oily, is a mark of a melting of the parts of the animal. That which is very fetid is a mark of no small degree of putridity. With regard to them all, if the quality of the excrements does not correspond with the food which had been taken, you may thus judge of the affection. Of all kinds, the worst and most fatal is black, livid, oily, and what is hastily passed.

COMMENTARY. See, in particular, Hippocrates (Prognost.); and Galen (de Crisibus, xi.) Galen remarks that the stomach may do its office properly, but that, owing to the heat of the neighbouring parts, the moisture may be dissipated, and the contents of the bowels rendered too dry; or that, owing to an imperfect distribution of the chyle, they may be too liquid. When the alvine discharges are soft and consistent, we are certain that both the digestive and distributive functions are properly performed, and likewise, that no part within the belly is in a state of inflammation. He afterwards makes many other ingenious observations on this subject, the importance of which, towards the restoration of health, is now generally admitted. He remarks, that, agreeably to the description of Hippocrates (Prognost.) the proper alvine evacuation ought to be yellowish; for, if very yellow, it indicates the presence of too much bile, or, if it do not partake of that colour at all, it indicates that the passage of the bile to the intestines is stopped. Rhases and Avicenna concur in this remark. Galen describes the frothy evacuation, which appears to be the same as the one resembling yeast, described by modern authorities. Hippocrates (Progn.) and Galen makes mention of a discharge, which consists of small, hard, and convoluted portions. Galen is of opinion that it is occasioned by constipation and heat of the bowels. According to Hippocrates, a discharge of black bile indicates that death is at hand. (Aphor.) Theophilus treats of this subject at such length that we cannot afford room for a proper outline of what is contained in his treatise. Bloody evacuations, he says, proceed either from disorder of the liver, ulceration of the intestines, or rupture of a vessel. Discharges of pus may come either from the liver, or from the stomach, or from the intestines. A viscid and fatty evacuation indicates melting of the body, and if attended with a fetid smell, putre- COMM.

COMM. faction. Flatus in the bowels may either arise from flatulent humours forming in the bowels, or food dissolved into gases by the heat of the parts. (De Excrementis.)

The account of this subject given by Haly Abbas (Theor. vii, 16, and x, 10) is excellent, but principally collected from the Greek writers. An unctuous discharge, he remarks, is occasioned by a melting of the fat. If it be viscid at the same time, it indicates also a wasting of the principal members. A frothy discharge proceeds from heat and flatulence. A green evacuation indicates immoderate heat, and the presence of bile. Black discharges consist either of black bile, or of common bile blackened by immoderate heat. This, he says, is the worst appearance of all. If blood is discharged after the fæces, it may be supposed to come from the small intestines; but if before, from the large; and if mixed with the fæces, it probably comes from the intermediate parts. See also Alsaharavius (Theor. ix), and Rhases (Cont. xxxi.) Rhases states that white fæces arise from jaundice. When the discharges are watery, the nourishment of the body is stopt.

The opinions of Hippocrates and Galen on this subject are correctly stated and explained by Prosper Alpinus (De Præsag. Vita et Morte ægrot. vii, 11.)

SECT. XIV.—ON THE INDICATIONS FROM THE URINE.

As concerning the alvine discharges, so also with respect to the urine; using that of healthy persons as a rule, we shall hence form our indications of that of persons in disease. That urine, therefore, is best, which is nearest to that of healthy persons. Such is that which is at the same time of a faintish golden, or faintish saffron colour, and which, moreover, is moderate as to consistence. There are three varieties of turbid urine; for, either straightway after being voided it deposits a sediment; or it always remains the same; or it is voided pure, but afterwards becomes turbid; of these, the third is bad, the first favorable the second intermediate between them. That which is wholly unconcocted, being altogether watery, is symptomatic of digestion being entirely gone in the venous system; and when it is passed frequently, the disease is called diabetes, which is the

worst of unconcocted urines. Next to these is the thin and white urine, which resembles water. Nearly allied to these, is another kind of urine, appearing in many diseases, and which is very like to the thin and white. The palish is next to this. The pale may also be of a faintish golden colour, and is concocted in proportion as it partakes of this colour. It ought, however, to be as much different from water in thickness as in colour, if it is to be properly concocted. But if it preserve exactly its natural colour, and have a white, smooth, equable, and copious sediment, it is indicative of perfect digestion. A greater quantity than natural indicates that a crude humour is purged off; but if it is somewhat thicker than natural, and has a certain sediment, it is not then altogether unconcocted. But if it have gritty, scaly, furfuraccous, black, livid, green, or fetid sediments, such urine is altogether unconcocted and particularly mortal. But urine of a proper colour, and which at the same time has white, smooth, and equable sediments, or certain cloud-like appearances, or substances swimming in the middle of a like kind, is of all others the best. Of these characters, the sediment is of the most importance; next, the substances swimming in it; and third, the cloud-like appearances on its surface; and, on the whole, of the substances which float in the urine, the more they sink downwards so much the better.

COMMENTARY. See Hippocrates (Prognost. ii, et de Vict. Acut. c. 46); Galen (Comment. de Crisibus, i, 12); Celsus (ii, 7); Theophilus (de Urinis); Actuarius (de Urinis); Abicianus (de Urinis; De Urinis secundum Syros, de Urinis secundum Persas, de Urinis Commentatio, ap. Phys. et Med. Græc. Minor. ed. Ideler); Aëtius (v); Avicenna (iv, 2, 1, Cantic. p. 1); Averrhoes (Collig. iv, 21); Haly Abbas (Theor. iv, 12, x, 10); Alsaharavius (Theor. viii); Rhases (ad Mansor. x, 30, and Contin. xxxi); Psellus (Opus Medicum.) COMM.

Of the ancient authorities who have treated of the urinary discharges, Theophilus and Actuarius are most particularly deserving of attention. Besides the watery portion, the ancients distinguished three distinct substances in the urine: 1st, the hypostasis or sediment, which is the part that falls to the bottom; 2d, the enæorema, or substances which float in the watery part, but have not weight to subside; 3d, the nubeculæ, or cloud-like

COMM. appearances seen floating on the surface, or as they may be called the scum. All the different appearances which these substances put on, including every imaginary shade of colour, are described with surprising minuteness, and connected with the morbid conditions of the system which gives rise to them. In fact, there is no part of our task which we are obliged to discharge in so unsatisfactory a manner to ourselves as the present; for, to give our readers anything like a competent exposition of the knowledge possessed by the ancients on the morbid appearances of the urine, we would require to transfer to our pages the whole contents of the large treatise of Actuarius. We shall now give a few extracts from his work and that of Theophilus. They state that the urine of sedentary persons has more sediment than that of persons who pursue an active course of life; that the urine of women, from this cause, has generally more sediment than that of men; that of children more than that of adults; and that of persons who live grossly, than the urine of temperate persons. Theophilus thus delivers the characters of oily urine. When in fevers the urine assumes the colour of oil, it indicates that the fat of the body is melting down. When the appearances of the urine resemble oil still more, it indicates an increase of the melting of the fat; and when the urine in consistence and colour appears exactly like oil of a dark colour, it prognosticates a collapse and death. (§ 17.) This accords with what is stated in one of the aphorisms of Hippocrates: "When in ardent fevers the urine has an oily sediment, it prognosticates death." The tare-like urine, as it was called from the resemblance of the sediments to the colour of the tare (*errum errilia*), but which might be better called the grumous, since, as Actuarius explains, they bear a close resemblance to clots of blood, is said by Theophilus to be indicative of melting of the flesh. The scaly urine derived its name from small substances resembling the husks or hulls of grain in the urine, and in febrile diseases was supposed to indicate great disorder of the general system, but otherwise to be connected with an affection of the bladder. The furfuraceous, which derived its name from the resemblance of the sediments to bran, was also held to be symptomatic of local disease of the bladder, or of constitutional disorder in fever. The gritty, so called from the resemblance of the substances in the water of the urine to large particles

of ground grain, was reckoned by all the authorities, from Hippocrates downwards, as a very bad symptom in fevers. Fetid urine was supposed to indicate melting or putrefaction of the body. Actuarius gives a curious account of urine without sediment, which he ascribes to its being attracted to some part of the system which is the seat of inflammation or erysipelas. (v, 5.) The enæorema, or substances in the middle of the urine, are said by Actuarius sometimes to resemble spiders' webs, sometimes specks of oil like what appears in fat broth when cooled, and at other times hairs, as will be more fully stated elsewhere. The nebulæ, or scum on the urine, is said to put on various appearances, as, for example, that of bullæ or bubbles, of which mention will be made in another place. From a passage in Theophilus (v, 8), it may be inferred that the ancients sometimes applied external heat as a test of the characters of the urine. On the main the differences in the colours of the urine were held to depend on the mixture of bile in the urine, and sometimes, though rarely, of blood. COMM.

As a specimen of the doctrines of the Arabians, although, in fact, entirely borrowed from the Greeks, we shall select a few of the observations of Haly Abbas and Alsaharavius. According to Haly, thinness of the urine indicates deficient digestion. Thickness, on the other hand, is the product of excessive digestion, or arises from the presence of pituitous humours in the body. When the sediment is white, it is a favorable symptom; when yellow, it is from yellow bile; when red, it is from a sanguineous plethora and imperfect digestion; and if of long continuance, it must proceed from inflammation of the liver. If, after intense redness, the urine becomes black, it is a most fatal symptom. When the urine is moderately fetid, it is connected with indigestion; but when very fetid, with putrefaction. Alsaharavius delivers the characters of the different kinds of urine in nearly the same terms. He properly cautions the physician not to allow himself to be imposed upon by the colour of the urine, which may sometimes acquire a tinge from the patient's having taken saffron, cassia-fistula, or the like. Such tricks, he says, are often practised upon water doctors. According to Rhases, it is an unfavorable symptom when the urine does not become turbid in the course of the fever. Yellow urine without sediment is said to be unfavorable.

COMM. Prosper Alpinus has stated correctly the doctrines of Hippocrates and Galen, but is entirely silent respecting those of Theophilus and Actuarius. (u. a.)

Besides the ancient authors referred to by us in this chapter, the works of the following writers *de Urinis* exist in manuscript, but have never been published: 1, Athenæus, quoted by Du Cange (ex Cod. Colbert, 3614); 2, Constantinus Africanus (in Bibl. Cæsarea); 3, Joannes Episcopus (Cod. Reg. 3497); 4, Maximus Planudes and Meletius Monachus (Cod. Reg. 3175); 5, Nicephorus Blemmydes (in Bibl. Cæsarea); 6, Anonymus, &c. (Cod. Colb. 3614 and 4230, et in Bibl. Cæsar.); 7, Piropulus (in Bibl. Corsliniana, 448.) See Fabricii (Bibl. Grac. xiii, 779.) The treatise of Abicianus, noticed by Fabricius, has been published by Ideler. It proves to be a mere compilation from the works of Avicenna.

SECT. XV.—ON THE INDICATIONS FROM THE SPUTA.

Such as are somewhat yellow, golden, frothy, and thin, indicate only want of concoction, but nothing positively bad. But such as are intensely yellow, golden, frothy, green, viscid, round, and still more the black, are bad. For, with the exception of the blood, whatever of the other humours is unmixed, indicates a bad diathesis, having its origin in an inflammatory heat. The bloody sputa are of an intermediate character, but those of yellow and black bile are unfavorable. The manner in which they are brought up ought also to be considered; for, if they are readily spit up, it is clear that such are good, whereas the contrary are bad. It is an indication of complete concoction that the expectoration is unctuous, white, and equable, and in consistence, neither fluid nor very thick; as it is of a complete failure of concoction that it is not spit up at all. If it is indeed spit up, but thin, it is a mark of feeble concoction. If it is of an unmixed yellow or golden colour, it is not good. But if it is livid, of a verdigris-green, or black, it is a most fatal symptom.

COMM. COMMENTARY. Galen has treated fully of this subject in his work (de Crisibus, ii, 10.) See also Hippocrates (Prognost. and Coacæ), and Celsus (ii, 9.) Aëtius is somewhat fuller than our

author (v, 52.) See Avicenna (iv, 2); Averrhoes (Cantic. i, 2); Haly Abbas (Theor. vii and x, 10); Rhases (ad Mansor. x, 24.) COMM.

We shall be content with giving a few of the observations of the Arabians, of whom Haly is the most full and accurate upon this head. The lungs and the other parts within the chest being the organs of life, when affected, they occasion inflammation of the heart. Expectoration indicates some affection of those parts. When the expectoration is thin and small in quantity, the disease is not concocted; when the sputa are of moderate consistence and equable, the disease is at its acme; when thick, it is certainly on the decline. Thinness indicates that the humour which occasions the complaint is of a subtle nature; thickness, the contrary. Blackness indicates vehement heat. Green sputa are indicative of the presence of green bile, white of phlegm, and redness of blood. When fetid, they proceed from putrefaction. Black sputa indicate great danger.

Prosper Alpinus makes many ingenious remarks on the characters of the sputa. (De Vita et Morte ægrot. vii, 19.)

SECT. XVI.—THE DIAGNOSIS AND CURE OF EPHEMERAL FEVERS.

It is a peculiar and inseparable symptom of ephemeral fevers, that concoction of the urine takes place on the first day; and a pleasant state of the heat is likewise peculiar and inseparable from such fevers. After the first resolution of the fever, you will have a still more confident diagnosis; for the motion of the arteries then becomes similar to that of persons in health, whereas no other fever returns so soon to the natural state. And it is also a very great mark of this fever that the patient bears it well. Those persons are readily seized with this complaint in whom the perspirations are not vaporous, but very acrid, as if containing something fuliginous. Such are they who are of a hot and dry temperament, and, in fine, those who are troubled with bitter bile. Those who are seized with this fever from fatigue should be rubbed softly with oil and bathed; but those from dryness, are to be rubbed less and bathed more. Those from cares, grief, watchfulness, or anger, are not to be bathed often, but slightly rubbed with plenty of tepid oil possessed of little stypticity; and bathed according to habit. Those who

have been seized with the fever from inordinate heat are to be treated from the commencement with cooling things and more baths, but by no means with much oil and friction. The cooling things should be rose oil, or cold oil of unripe olives, prepared without salts. The same are to be poured upon the open of the head, and the bath used when the fever has passed its acme. If a person has a fever from congelation, he is to be bathed in the decline; but if the fever be attended with catarrh, he is not to be bathed until concoction takes place; but those who have fever from exposure to heat are to be bathed while these symptoms are present. Those from exposure to cold are to be warmed moderately, and have the head bathed with such applications as the oil of iris and of nard. To those in whom the fever is occasioned by constriction of the skin, the proper remedies are, tepid baths of sweet waters, friction to open the pores, exercises, and an exhilarating diet. Those in whom the fever is occasioned by want of food are to be led to the bath after the decline of the first paroxysm, and to have plenty of tepid oil poured upon them; are to be rubbed most gently, and to remain for the greater part of the time in the cistern of the warm bath. After coming out and recovering their strength, they are to be led again to the bath, and afterwards get warm water to drink, the juice of ptisan, and sometimes of lettuce; and are to partake of fishes having tender flesh, in white broth. The common diet in all these cases ought to consist of things which contain good juices, of easy digestion, and which will not be restrained within the pores of the skin. Wine should be given which is watery in appearance and strength. It will sometimes be proper, on the first attack of the fever, to give some nourishing food, when the fever has been enkindled by an intemperament inclining to the hot and dry. Those who have this fever from inflammation of the glands of the groin, do not require a physician to instruct them what ought to be done; for, attending to the ulcer from the time that the bubo is formed, they take the bath in the decline of the paroxysm. But they ought to be restricted as to wine, until the inflammation of the groin is resolved, and use a spare diet.

COMM. COMMENTARY. Among all the remains of ancient medicine which have come down to us, there is not, perhaps, anything

more valuable than the reports of febrile diseases, contained in the 'Epidemics' of Hippocrates, illustrated, as they fortunately are, by the learned 'Commentaries' of Galen. Many of them are histories of ephemeral fevers, brought on by certain exciting causes, and terminating in synochus. The procatarctic causes generally assigned are fatigue, excessive debauchery, grief, exposure to extreme heat or cold, and the like. Comm.

Hippocrates thus defines the duty of the physician in conducting the treatment of febrile diseases: To be able to tell what had preceded them; to know the present state and foretel the future; to have two objects in view, either to do good, or at least to do no harm. (Epidem. i, 7.) His general rule with regard to regimen in fevers is most important, namely, that a diluent or moistening diet is proper in all febrile affections. (Aphoris. i, 16.) See his Comment. (t. ii, p. 283, ed. Dietz.)

Of no disease has Galen treated so frequently and fully as of fever. (See de Diff. Febrium, Meth. Med. viii and ix; Therap. ad Glauc., de Crisibus ii, 13, et alibi.) He everywhere inculcates that ephemeral fevers are affections of the *spirits*, by which he seems to have understood the heat and gases contained in the blood. The exciting or remote causes of them, according to him, are want of sleep, indigestion, sorrow, fear, anger, anxiety, the application of heat and cold, excessive fatigue, tumour of the groin, and the like. He remarks, that the heat in these fevers is not offensive on the first application of the fingers, but conveys an acrid sensation after a short time. He has particularly stated constriction as a proximate cause of fever; and this, by the way, is agreeable to what is stated by Cælius Aurelianus: "quidam vero conclusioni viarum causam febrium ascribentes." (Acut. Morb. ii, 33.) In this variety, he approves of venesection, unless the patient be a child or a very old man. In the other cases, his most approved remedy is the bath; but his treatment is judiciously varied, according to circumstances. For example, when the fever arises from the depressing passions, he forbids hard friction and frequent baths, and merely directs us to pour tepid oil over the patient's body. When it is produced by exposure to heat, he forbids us to use much oil, or to have recourse to hard friction, and directs us to pour upon the head water which has been cooled by means of ice, and to put the patient into

COMM. a cold bath. Alexander, however, finds fault with him for giving heating medicines, such as pepper, and using hot applications over the stomach in such cases. Alexander's account of the nature and treatment of these fevers cannot be perused with too much attention. He mentions as characteristics of ephemerals, that the urine is properly concocted from the first; and that the pulses have a quick and elevated diastole, with a shorter systole; the vessels, he adds, requiring refrigeration, rather than purification. They arise, he says, from many and various causes, such as repletion, want, watchfulness, fatigue, disorder of the belly, apostemes; and, in a word, from all the procatarctic causes. When the fever is occasioned by excessive fatigue, the indication, he states, is to supply moisture to the body, rather than to take from it. Hence, all friction with discutient oils ought to be avoided; and what is used for rubbing the body should be mixed with much water. But the principal dependence is to be put upon the tepid bath. Here, again, he thinks that Galen erred, in not directing that the oil used for rubbing the body should be diluted with water. He adds, that it will often have an excellent effect after the patient has come out of the tepid bath, and been anointed as directed, to make him take a warm bath and remain in it for a considerable time. When ephemerals arise from indigestion, he gives very minute directions for the treatment, according to the nature of the exciting cause. When connected with constriction, he approves of bleeding, if, as generally happens, it be attended with fulness.

Oribasius and Aëtius treat of ephemeral fevers in much the same terms as our author.

Palladius says that ephemerals are affections of the *spirits*, arising from some external exciting cause, such as fatigue, intoxication, anxiety, watchfulness, or from a tumour of the groin. Celsus gives a similar enumeration of the causes, but in briefer terms: "Febris ex inguine, vel ex lassitudine, vel ex æstu, aliâve simili re est." Almost all the authorities, from Hippocrates downwards, mention enlargement of the glands, especially those of the groin, among the causes of fever. Agathias, the historian, remarks, that pestilential fever is attended with enlargement of the inguinal glands, but does not terminate favorably in one day, like the ephemerals. (Hist. v.)

Stephanus, the commentator, accounts for the enlargement of the glands in fever, as being a collection of the impurities of the system in its weakest points. (Ed. Dietz, p. 244 and 256.) Comm.

Nonnius enumerates nearly the same causes of these fevers as our author, whom he appears to have followed closely. He remarks, that ephemerals are sometimes protracted to the third or fourth day, from which it appears that the term is not to be taken in too strict a sense. Leo, also, expresses himself in like terms.

Synesius treats of ephemeral fevers with great accuracy, so that we have reason to regret that the text of this author should be so corrupt. Like preceding authors, he enumerates, among the exciting causes, abscess of the glands of the groin, neck, and armpits, the heat of which, he says, being determined to the heart, kindles a fever. In this case he recommends discutient and emollient applications, such as mallows, linseed, and the like. The account given by Constantinus Africanus is exactly similar to his.

Actuarius mentions the same causes, and briefly recommends the same treatment as our author.

Alexander Aphrodisiensis says expressly, that the ephemeral fever may pass into the putrid and the putrid into the hectic. (De Febribus, 28.)

Haly Abbas gives a most distinct and accurate account of the phenomena of ephemeral fevers, according to the nature of their remote causes. The first class are produced by external causes, such as exposure to the heat of the sun, hot baths, or astringents which occasion constriction of the pores of the skin. He also inculcates that these causes may likewise give rise to synochous or putrid fevers. The second class are produced by calefacient food and medicines. The third class are occasioned by immoderate exercise, or violent passions, such as anger, fear, and the like. The fourth are sympathetic affections proceeding from inflammatory swellings of the glands. He remarks, that in certain kinds of fever the increase of heat is not felt upon the first application of the hand, owing to constriction of the pores. (Theor. viii, 3.) His treatment merits attention. When the fever arises from a hot cause, he directs us to pour refrigerant liquids, such as vinegar, rose oil, and the like, upon the head, and to apply to the forehead a cloth

COMM. moistened with the same. When the fever is produced by cold, he recommends the warm bath, with friction, in order to promote perspiration; after which calefacients may be given; but he forbids wine, if the exciting cause be great, lest it should occasion a conversion of the complaint into a putrid fever, which, as he remarks, Galen states not to be an uncommon occurrence. To prevent this he recommends venesection and the liberal administration of diluents. The next class of ephemerals of which he treats are intestinal fevers originating in errors of food and drink. For these he recommends cooling drink, cooling articles of food, clysters, eccoprotics, and the like. When the fever is brought on by violent labour, he prescribes the tepid bath, gentle friction with emollient oils, light food, and a spare allowance of wine, provided the patient has been habituated to it. When the fever is produced by violent emotions of the mind, he recommends the tepid bath, refrigerant food, camphor, and the like. When it arises from sorrow, he directs us to have recourse to treatment of an exhilarating nature, the bath, wine, and so forth. For fever brought on by want of sleep, he recommends soothing treatment, the affusion of tepid water and wine, if the patient has been accustomed to it. In fevers arising from glandular swellings, he approves of venesection, and forbids the use of the bath and of wine. This is somewhat different from our author's treatment. The account of the causes and treatment of ephemerals given by Alsaharavius is so like that of Haly Abbas, that we shall not enter particularly upon it. Serapion, Averrhoes, and Avenzoar give sensible expositions of the causes and cure of these fevers; but there is little in them worthy of attention that is not derived from the Greeks. Avenzoar states distinctly, that, if neglected or mismanaged, they are apt to be converted into putrid, or synochous fevers. For ephemerals occasioned by labour, he recommends the tepid bath, and friction with the pulp of melons. Avicenna remarks, that if, in ephemerals, the blood become inflamed, the fever is apt to be converted into synochous, or, if it become putrid, into putrid fever. This, he says, is particularly the case, when the ephemeral fever is connected with obstruction of the pores of the skin. For the cure of this species, he approves of venesection. He recommends the same remedy when the disease arises from

drinking too much wine, or from aposteme of the groin, armpits, or neck. His expositor Syrasis particularly commends the tepid affusion in ephemerals. Rhases joins in enforcing the same practice as Avicenna. He gives a most comprehensive account of the causes of these fevers. Like all the other authorities, he decidedly inculcates this important fact, that, although ephemeral fever be in itself neither serious nor fatal, it may be converted into a vehement and acute fever, when any error is committed in the regimen or method of cure. Constriction, he says, may take place, either in the pores of the skin, or in the internal parts, and is generally occasioned by cold or astringents. This is one of the causes of fever. The others are, immoderate exercise, the application of heat, food of a heating nature, and putridity. COMM.

According to Prosper Alpinus, the Methodists held that the proximate cause of fever is constriction. Galen, as we have stated, held this to be one of the causes, but not the sole one. The Methodists, like our Cullen and Hoffman, seem to have generalized too much. Their most approved remedies were the warm bath and friction with emollient oils. (De Med. Method. v.)

The earlier modern writers on medicine give the same account of ephemerals as their ancient masters, whose views in all cases they servilely adopt. See Rogerius (Tract. iii), and Platearius (de Febribus.) Rogerius correctly remarks, that ephemeral fever, from enlargement of the glands, is merely symptomatic. The causes of ephemerals, as enumerated by him, are exposure to extremes of heat and cold, food and drink of a heating nature, strong exercise, violent passions of the mind, and the like. Platearius remarks that if an ephemeral be prolonged beyond the third or fourth day, it is apt to be converted into a putrid fever.

SECT. XVII.—ON DIAGNOSIS OF FEVERS FROM PUTREFACTION.

The diagnosis of fevers from putrefaction is formed from observing that none of the procatarctic or exciting causes had preceded; and it is peculiar to fevers from putrefaction, that they do not commence with rigors, and have not been preceded

neither by strong heat or cold; and compression of the pulse is also peculiar to them. This is the name given to the pulse, when in the commencement of the paroxysm it is very small and irregular. This is a well-marked peculiarity of such fevers. But the strongest characteristic of putrid fevers is, the quality of the heat; for it is fuliginous so as to prove pungent to the touch. Want of concoction in the urine and feeble digestion are also peculiar to them; for, in such fevers, a strong and distinguished appearance of concoction in the urine is never to be seen at first.

COMM. COMMENTARY. This Section is mostly taken from Oribasius (Synops. vi, 7.) Many of the histories in the Epidemics of Hippocrates are synochous fevers, accompanied with putrefaction of the fluids. Galen remarks that they occur principally in persons of a plethoric and gross habit of body. (Meth. Med. viii.) According to him, putrid fevers may either arise from the conversion of ephemerals, or originally from putrefaction of the fluids within the vessels. (De Diff. Feb. i, 9.) Aëtius states that they arise from constriction of the skin, or viscidity of the humours, whereby the perspiration is stopped, and the quality of the vital heat so altered as to give rise to putrefaction, first of the fluids, and afterwards of the fat and solid parts. When these corrupted fluids are contained within the vessels, they occasion synochous fevers; but, when distributed over the body, they give rise to intermittents. (v, 74.) Synesius and Constantinus Africanus give a similar account. Alexander gives an interesting and ingenious disquisition on the origin and nature of putrid fevers, one of the most common causes of which he holds to be the conversion of ephemeral fevers, and the inseparable symptoms being want of concoction in the urine and quickness of the pulse with systole. This is the account of them given by most of the other authorities, both Greek and Arabian, so that we need not enter into any very circumstantial exposition of their views. We shall merely give the brief account of them furnished by Palladius. There are, he says, two kinds of synochous fevers, the one being occasioned by effervescence, and the other by putrefaction of the blood; of these, the latter are the more protracted and dangerous. In them the pulse is contracted, the heat pungent, and the urine white and putrid. Among

the Arabians, see, in particular, Alsaharavius (xxxii, 6); Haly Abbas (Theor. viii, 5); and Rhases (Cont. xxx.) Rhases states that putrid fevers are often engendered by eating too much fruit, such as peaches. He says they generally begin with depression of the pulse, horripilation, torpor, and somnolency. COMM.

SECT. XVIII.—THE CURE OF PUTRID FEVERS.

When the powers of the constitution are strong, a person affected with a putrid fever ought to be bled in the commencement, provided there be no crudities in the stomach. But when the powers are weak, or the age of the patient is an objection, you must not bleed. After the evacuation by bleeding, it will be proper to clear away the putrid matters by urine, the belly, and sweating. And, if they have spontaneously been determined towards the mouth of the stomach, they may be evacuated by emetics, but otherwise you must not produce an unnatural irritation. Such things ought also to be selected as will effect the afore-mentioned evacuations without heating or drying, such as the juice of ptisan, honied water, oxymel, apomel, and the root of parsley. When the belly is not opened, an injection of mulse, with oil, may be given. The body is not to be rarefied before evacuations; but, after evacuations, it may be rarefied by means of an oil possessing a gentle heat, such as that of chamomile. At this season, all the secretions are promoted by drinking of some watery wine, and using a tepid bath of sweet water. When the strength of the fever is an objection, you must neither use wine, the bath, nor rarefying unctions; but, in such cases, drinking of cold water is the most suitable remedy, if nothing prevent the use of it likewise. But if all the powers are strong, the fever of a very hot nature, with clear symptoms of concoction, cold water may be given boldly. But if he is muscular, and the constitution of the air hot and dry, he will not be hurt by being thrown into a cold bath. And if the fever is moderate, and the strength good, with symptoms of concoction, baths, the drinking of wine, and unctions of a rarefying nature will be beneficial to such persons.

COMM. COMMENTARY. All subsequent writers on this subject are indebted to Galen for laying down, in the most satisfactory terms, the principles upon which the treatment of putrid fevers ought to be conducted. He particularly recommends bleeding *ad deliquium*. When this evacuation is neglected, the patient's only chance of safety is from a spontaneous hemorrhage or profuse perspiration. He is so confident in the remedial powers of venesection, that he directs it to be performed as late as the seventh day, and even later, if the strength of the patient permit. He particularly directs us likewise to allow the patient to drink as much as he chooses of the coldest water, which, he says, when seasonably administered, is most efficacious in extinguishing the febrile heat. This remedy, however, he says, is to be used with becoming caution. But, upon the whole, he strenuously inculcates that the safety of the patient depends upon the free use of phlebotomy and cold drink. When the fever abates, he allows wine. Alexander, although sufficiently disposed to differ from Galen, entirely concurs with him in opinion respecting the treatment of putrid fevers, for which he particularly commends bleeding and cold drink. When venesection is contraindicated by the weakness of the patient, he is to be treated by a refrigerant and diluent regimen.

Aëtius and Oribasius follow Galen, and their treatment, therefore, agrees perfectly with our author's. Synesius and Constantinus Africanus agree in recommending bleeding and cold drink. But when the patient is very weak, they forbid us to have recourse to the former, and, in that case, direct us to use gentle aperients, and medicines of a refrigerant and diluent nature, such as prunes, jujubes, purslain, and the like.

Although Avicenna lays little claim to originality, his plan of treatment in this case is deserving of attention, as being directed by the soundest judgment. He begins with venesection, if the patient's strength permit, and then opens the belly gently, but cautions against violent purging. He then gives first diuretics, and afterwards sudorifics. Unless when the stomach is loaded with crudities, he approves very much of cold drink. Though favorable to the seasonable practice of venesection, he forbids it except at the commencement; and directs to proportion the loss of blood to the strength of the patient. He also forbids interference with the crisis by bleeding, purging,

or giving gross food at that season. Further, with regard to venesection, he does not approve of abstracting much blood at once, which may occasion a dangerous prostration of strength; but prefers taking a moderate quantity, and repeating the operation, if necessary. The purgatives which he most commends are tamarinds and myrobalans; but when these are not sufficiently strong, he permits scammony, aloes, and colocynth to be given. He also directs us to give camphor as a refrigerant. It is to be kept in mind that the Arabians held the action of camphor to be frigorific, that is to say, narcotic. He is most minute in his directions about the diet. For drink, he gives barley-water, with a small proportion of wine or vinegar. COMM.

Haly Abbas lays down the rules of treatment with great precision. He recommends venesection at the commencement, provided the fever be of a sanguineous type; but, if the patient be debilitated, he is to be treated with refrigerants.

Averrhoes treats of putrid fevers at great length, and with more than his usual judgment; but, as he differs but little from Avicenna, we shall not attempt to give an abstract of his practice. (Collig. vii, 9.) Rhases gives a full account of the practice of the Greeks. When the extremities are cold, and the pulse weak, he directs them to be rubbed, in order to draw off the blood from the internal parts.

Alexander Aphrodisiensis inquires how it happens that wine, which is of a hot nature, proves useful in fever. The amount of his speculations upon this matter is this, that the wine acts by strengthening the powers of the system. (Probl.)

All the ancient authorities disapprove of the bath, except in the decline of the fever. See Ugulinus (de Balneis.) Rabbi Moyses says that the use of it is to be regulated by three circumstances: 1st. That no rigor be present. 2d. That no important member be affected. 3d. That there be no crudities in the veins. These appear to be very judicious regulations.

SECT. XIX.—THE DIAGNOSIS OF TERTIAN FEVERS.

The tertian fever being occasioned by yellow bile set in agitation, has a considerable rigor in the beginning, which differs, however, from the rigor of a quartan in this, that the skin feels

as if it were pierced and wounded; but, in quartans, the attack is accompanied with a strong chill; and quotidians have no preceding rigor, they are only accompanied with a chill. But in tertians, the order of the pulse is regular, and the fever is attended with strong thirst towards the acme, and burns up the man; but shortly afterwards the acme takes place, and the heat is equally diffused everywhere. If you apply your hand, at first it is met by a strong and pungent heat, which seems as if carried upwards in the form of vapour, but it is soon extinguished under the hand, if it is allowed to remain. And when the person drinks, a hot vapour in great quantity immediately issues from the skin, announcing sweat. But vomiting of bile supervenes, or the belly is purged, and bilious urine is passed. With these the fever goes off, having comprehended not more than twelve hours in one paroxysm. When, therefore, it abates within twelve hours, we call it true tertian; when the paroxysm is more protracted, we name it simply tertian; and when the paroxysm is prolonged to the utmost, so as to have but a small interval, we call it prolonged tertian.

COMM. COMMENTARY. Hippocrates relates many interesting cases of tertian fevers in his 'Epidemics.' He attributes their origin to bile. (De Nat. Hum. 29.)

Celsus describes two kinds of the tertian, the one beginning with shivering, and being succeeded by heat, the paroxysm returning every alternate day; and the other constituting the semi-tertian, of which we will have to treat afterwards.

Galen treats of these fevers in different parts of his works. (In Hippocrat. Epidem. Comment., Therap. ad Glauc., de Different. Feb. ii, 3, de Typis, 3.) The symptoms of the tertian are thus described by him: It is attended with intense thirst, heat, acrid and bilious vomitings, loss of appetite, and restlessness. For the most part these symptoms are preceded by rigors, or sometimes by extreme coldness. The pulse in tertians is small and dense. At first, the night preceding an attack is passed in a restless state, but after the disease is prolonged this is not the case. The urine is yellow. In many parts of his works he announces it as his decided opinion that the quotidian intermittent is produced by phlegm; the tertian by yellow bile; and the quartan by black bile. This theory of intermittents

was adopted, in a word, by all his successors. See Oribasius (Synops. vi, 9); Aëtius (v, 80); Nonnus (de Febr. 6); Palladius (de Febr. 6); Alexander (xii, 6); Synesius (iii); Avicenna (iv, 1, 2); Haly Abbas (Theor. viii); Serapion (vi, 13); Avenzoar (iii, 1, 2); Averrhoes (Collig. iv, 28.) COMM.

SECT. XX.—ON THE CURE OF TERTIAN FEVER.

In the true tertian, as arising from yellow bile, we must dilute and cool, evacuate the defluxions upon the stomach by emetics, and downwards by the belly, and carry them off by urine and perspiration. The bowels, therefore, are to be moved by emollient clysters, and the secretion of urine promoted by infusions of parsley and dill in the drinks. And if symptoms of concoction appear, you may confidently give wormwood. Apply also baths of warm common water, and let neither nitre, nor salts, nor mustard be sprinkled upon the body in the bath; but let the patient enter it after having had warm oil poured over his body. There will be no mistake if those who are fond of baths be bathed twice; and, if symptoms of the diseases being concocted appear, there will be no harm even if they be bathed oftener. Until the disease is concocted, wine is to be entirely prohibited; but when concoction commences, first some thin and watery wine may be given, and food of a diluent and cooling nature will be proper; but honey, mustard, pickles, and everything heating must be abstained from. Such was the practice of the ancients; nor is it to be wondered at, as these men were more habituated to exercises and a restricted diet; but now, when order is perverted, the bile is, for the most part, found mixed with phlegm. Wherefore, now-a-days, most tertians are either without a rigor, or it is very slight. And the mode of cure is also changed; for, neither does the bath suit with tertians now before concoction, nor yet a full diet, except crumbs of bread, eggs, or the like.

COMMENTARY. Hippocrates recommends generally purgatives at the commencement, and afterwards the hot bath, and trefoil, assafœtida, and wine, to promote perspiration. (De Morbis, ii, 39.) He lays it down as a general rule applicable COMM.

COMM. to all intermittent and remittent fevers, that the administration of food should be restricted during the paroxyms. (Aphor.) See the Comment of Theophilus (ed. Dietz, t. ii, 268.)

Celsus informs us that Cleophantus treated tertians by pouring warm water upon the patient's head, and giving him wine before the accession of a paroxysm. This, however, he considers to be precarious practice. Upon the whole, his great dependence is upon these three remedies: vomits, purgatives, and wine; of which the first is to be tried on the third day, the second on the fifth, the third on the seventh.

Galen's practice is exactly detailed by our author. He evacuates the bile upwards and downwards at the commencement, and also, with the same intention, administers diuretics and sudorifics. After these he reposes great confidence in wormwood, which, indeed, all the ancients held to be a powerful cholagogue. He also approves much of the tepid bath of common water. He directs the physician not to neglect venesection, if it be indicated; upon which his commentator Stephanus remarks, that the circumstances commonly indicating bloodletting are the condition of the patient, if he be young and plethoric, and the season of the year, if it be spring. (Ed. Dietz.) He forbids wine until the fever is concocted, but afterwards allows a small quantity of thin watery wine. The food is to be refrigerant, and diluent. Everything of a heating and acrid nature is to be abstained from.

Aëtius, Oribasius, and Nonnus conduct the treatment upon the principles laid down by Galen. Actuarius directs bleeding at the commencement.

Alexander discusses the established principles of treatment freely and fully. He disapproves of Galen's practice of giving the decoction of wormwood in the genuine or true tertian, after the seventh day, and confines the administration of it to spurious tertians, when he mixes it with oxymel. His own remedies are of a diluent and refrigerant nature. He approves very much of the bath. He speaks highly of the good effects of grapes and peaches, and still more of water-melons given with cold water before the fit. He approves of gentle, but not of strong purgatives. He praises very especially a rhodomel prepared from the juice of roses, honey, and scammony; and another, consisting of the same ingredients, along with agaric and pepper.

Synesius recommends cooling articles, such as damascenes, gourds, &c. but says nothing of wormwood. Constantinus Africanus also omits to make mention either of wormwood or the tepid bath. He, however, pours water on the head and puts the feet into hot water. COMM.

Serapion directs emetics, if the matters are determined to the stomach, and clysters, or gentle purgatives, if to the bowels. He recommends myrobalans afterwards, and then wormwood, but not until the morbific matter is concocted. (Tr. vii, 13.)

Rhases recommends gentle and cooling purgatives, with refrigerant and diluent drinks, containing sorrel, cucumber, camphor, &c. (Ad Mansor. x, 4.)

Avicenna's directions are exceedingly minute, and seemingly very judicious. He cautions against using drastic purgatives, and expresses himself doubtfully of the effect of venesection. His practice consists principally in the administration of gentle purgatives, diluent and refrigerant medicines. He approves of pomegranates, plums, and water-melons. Averrhoes lays down the same principles of practice. (Collig. vii, 11.) Haly Abbas states that, as it is the nature of these fevers to occasion heat and dryness of the body, they are to be treated with diluents and refrigerants. Agreeably to these principles, he directs us to give clysters and gentle laxatives, to use the tepid affusion, and the like. (Pract. iii, 12.) Alsaharavius recommends similar treatment. Rhases, like Haly, recommends refrigerants and diluents. He approves of cooling purgatives, such as a combination of myrobalans and scammony, or a draught made from prunes and manna. He speaks favorably of emetics. Several of his authorities recommend the bath, and others approve of wormwood. (Contin. xxx.)

It will be remarked that many of the ancient authorities recommend the tepid bath for the cure of tertian intermittents. Prosper Alpinus informs us that he had seen this practice successfully pursued by the Egyptian physicians. (De Med. Ægypt.)

SECT. XXI.—THE CURE OF SPURIOUS TERTIANS.

It does not suit with spurious tertians to bathe at the commencement, nor until symptoms of concoction have made their

appearance. Neither does it answer to give food every day, but every alternate day will be sufficient. Rest and warm applications to the hypochondriac region agree with them, also broths of easy digestion, and clysters not very emollient. And if detraction of blood be expedient, it ought by no means to be omitted. The nature of the diet ought not upon the whole to be cooling and diluent, but things of a more incisive nature ought to be added. They are particularly benefited by the juice of ptisan, to which have been added pepper, hyssop, sweet marjoram, and spikenard. Also, add pepper to honied water, boil, and give it to drink, and likewise everything which will promote the secretion of urine, except those things which are of a very heating and desiccant nature. In particular, after the seventh day, give wormwood; and many have been benefited by drinking oxymel, and taking gentle laxatives. A vomit taken with food is very beneficial to those in whom the affection is of long continuance.

COMM. COMMENTARY. Galen explains that tertians are called spurious or bastard, when the symptoms assume an anomalous character. He states correctly that they are generally connected with disease of the spleen. His practice, which is consistent with his views of the nature of the attack, is similar to our author's, that is to say, he recommends venesection and fomentations at the commencement, and afterwards things of a hot penetrating nature, such as wormwood and pepper, which he, no doubt, gave with the intention that they should act as deobstruents. Here, again, Alexander cautions against the indiscriminate adoption of Galen's practice, affirming that these calefacient medicines sometimes prove dangerous, by increasing the inflammatory action. Almost all the other authorities, however, adopt the views of Galen. See, in particular, Oribasius (Synops. vi, 11); Aëtius (v, 81); Nonnus (de Febribus, c. v.) From the characters of the urine Actuarius infers that the spurious tertians are still more intensely bilious than the true, and consequently require longer time to reach their acme. (De Urinis, v, 15.) Avicenna recommends at first venesection and clysters; and afterwards deobstruent medicines, such as wormwood and pepper. Haly Abbas treats spurious tertians like true, at the commencement. After their acme, he strongly

recommends wormwood, but forbids it earlier. It acts, he says, by increasing the strength of the stomach, opening the pores, increasing the urine, and promoting the secretion of bile. He approves of wine in the decline of the fever, with the view of supporting the strength, and of promoting the urinary and cutaneous secretions. He therefore directs that the wine be white, and not too old. (Pract. iii, 13.) COMM.

From the account of the ancient practice in cases of tertians, as given in this and the preceding chapter, it will be seen that the use of bitters in these diseases was well understood formerly. The administration of pepper in such cases, it will also be remarked, was an ancient practice.

SECT. XXII.—THE DIAGNOSIS OF QUARTANS.

The quartan makes its attack with much coldness, as having its origin from a cold humour, namely, the black bile; but it is not attended with ardour and febrile heat like the tertian, neither does a vomiting of bile accompany. If, in addition to these, the urine be thin, white, and watery, the fever certainly is a quartan; but the characteristic of a true quartan is a small and rare pulse. They have their beginning most frequently in autumn, supervening upon wandering fevers. At that season, intermittents generally assume the quartan type, although sometimes the paroxysm observes a longer interval of days.

COMMENTARY. We mentioned, in the 18th Section, that the ancients held quartans to be occasioned by an accumulation of black bile. Hence, says Hippocrates, they prevail most in autumn, and attack persons between the ages of twenty-five and forty-five. (De Nat. Hum. 29.) He recommends principally for them emetics, purgatives, and the warm bath. (De Affect. 19.) By wandering fevers, of which mention is made by our author, is meant fevers, the paroxysms of which return after an interval of many days. See Hippocr. (Epidem.); Rhases (ad Mansor. x, 8.) COMM.

Our author's description is condensed from Galen (Therap. ad Glauc. i), or probably copied direct from Oribasius (Synops. vi, 12.) Galen states that quartans are of a less inflammatory

COMM. nature than tertians, and hence the pulse is slower and smaller. Ruffus (ap. Aëtium, v, 83) refers the origin of certain quartans to the spleen. Alexander says that quartans arise from yellow bile overheated, or from feculent blood, these humours being lodged either in the vessels or in the spleen. Palladius, Nonnus, Synesius, and, in a word, all the Greek authorities, give a similar account of the nature of quartans. Constantinus Africanus says that a paroxysm lasts for twenty-four hours, and is succeeded by an interval of forty-eight hours. The urine is at first white and watery, but in the decline becomes black. He mentions that it is connected with induration of the spleen. Actuarius gives a similar account of the nature of the disease, and of the characters of the urine. The disease, he says, is generally connected with some affection of the liver or spleen, and passes off by a discharge of black urine. He relates an interesting case to this effect. (De Urinis, ii, 17.) It may be proper to mention that in all other acute diseases, a discharge of black urine was reckoned a very mortal symptom. (De Urinis Comment. ed. Ideler.)

As there is nothing original in the theory and descriptions which the Arabians give of quartans, we shall not enter upon them minutely. Averrhoes states that the fever invades with a great sense of cold, so that the patient's teeth chatter. The colour of the urine at first inclines to green, or is somewhat white; but afterwards it becomes gross, black, or reddish. The interval between the paroxysms is two days. The most of those affected with quartans have disease of the spleen. Alsaharavius gives exactly the same account of these fevers. Avicenna's description is most ample and comprehensive, but contains no additional facts to those we have already mentioned. Haly Abbas, Avenzoar, and Rhases, in like manner, adopt the views of the Greeks.

SECT. XXIII.—THE CURE OF QUARTANS.

Those affected with quartans are to be treated gently, without any powerful medicine or evacuation, unless a great fulness of blood prevail, in which case it may be necessary to bleed. The diet should be good and not flatulent, and the belly ought to be loosened by the customary things; and, if these are not

sufficient, clysters may be used, at first emollient, and afterwards acrid. They must be prohibited from swine's flesh, and everything that is viscid and slowly evacuated, and also from all cooling and diluent articles of food. Let them use a thin white wine moderately warm, also pickles and mustard. And after an interval of some days, they should take the composition consisting of three peppers, or that called Diospoliticus. And if they take every day of pepper alone in water, they will do well. But if the patient is at the acme of the complaint, his diet ought to be very light, he should be enjoined to take protracted rest, and to take care of his bowels by using emollient and laxative things. Next, let him use diuretics; and if the symptoms of concoction appear manifest, then he may boldly have recourse to such as evacuate black humours, and that not once only, but frequently. After a powerful evacuation give also the medicine from vipers, and such others as are recommended for these fevers, among which is the well-known and most celebrated of all containing the Cyrenaic juice.

COMMENTARY. This Section is copied from Oribasius (Synops. vi, 13.) Galen, however, is the great authority upon this subject. With respect to venesection, he directs us to have recourse to it only when there is a plethora of blood; but recommends, when a vein has been opened, and the blood found to be black and thick, especially in the case of diseased spleen, to abstract blood until it change its colour. He approves of laxatives, and clysters, at first emollient and afterwards acrid. He forbids those things which were supposed to engender black bile, and recommends a thin white wine. He speaks favorably of pepper. When the disease is come to its acme, he recommends the state of the viscera to be rectified by fomentations and cataplasms, and by administering melanogogues, especially hellebore, in such quantity as to operate powerfully upwards and downwards. He speaks favorably of vipers, and also of assafœtida. (Therap. ad Glauc. i.) The Commentary of Stephanus on this work, lately published by Dietz, contains very sensible remarks on the practice here recommended. COMM.

Alexander delivers his opinions regarding the treatment of quartans at so great a length that it is impossible to do justice to them in an abridgment. As usual, he animadverts freely

COMM. upon the doctrines of Galen, whom he finds fault with for recommending desiccants and calefacients in every species of quartan fever; whereas he maintains that when it arises from adust bile, refrigerants are indicated. He strongly commends emetics at the beginning of a paroxysm. He approves of peppers combined with opium, henbane, and other articles. Synesius and Constantinus Africanus admit the distinction made by Alexander, and nearly follow his principles of treatment. Synesius makes mention of wormwood, which, however, had been recommended by Ruffus. (Ap. Aëtium.) Serenus Samonicus also recommends wormwood: "Mira est absinthi cum simplice potio lympha."

Celsus gives minute directions for conducting the treatment in all the stages of the complaint. He thus sums up the remedies which he recommends: "In ejusmodi valetudine medicamenta sunt, oleum, frictio, exercitatio, cibus, vinum."

Serapion mentions black hellebore, agaric, and the lapis lazuli, as medicines which purge black bile. (De Antid. vi, 15.) Averrhoes, however, cautions against using black hellebore for the cure of quartans; expresses himself in dubious terms respecting venesection; and, upon the whole, seems to place his principal reliance in things of a diffusible, attenuant, and penetrating nature. Haly Abbas, Avicenna, and Rhases speak of venesection in much the same terms as Galen, that is to say, they recommend it when symptoms of plethora are present, but say that it may prove prejudicial in any other circumstances. They approve of emetics at the commencement, and of wormwood in the decline of the fever. Avicenna appeals to Galen in favour of the black and white hellebore. Several of Rhases' authorities in his 'Continens' recommend bleeding. They in general approve of the early use of the bath, and of diuretics and sudorifics; and recommend, in the decline of the fever, things of a heating nature, such as pepper, anise, spikenard, ginger, &c.

It remains to be mentioned that *amulets* were very much used in ancient times for the cure of quartans. Alexander Trallian had great confidence in them. Galen supposed that they owed their virtues to the physical properties of the substances which were appended. Ælius Spartianus, one of the writers of the Augustan History, says, that the emperor Caracalla

wished to punish those who made use of amulets. On the *περίαπτα, περίαμματα,* vel amuleta of the ancients, see Andreas Laurentius (de Mirab. Strum. sanat. p. 83); Rendtorfius (Notæ in Anatolii Fragment. ap. Fabricii Biblioth. Græc. iv, 305); and Wolfius (ap. Act. Lips. 1690.) The practice of using amulets for the cure of diseases must have been very ancient, for it is alluded to by Pindar (Pyth. iii), and Theophrastus (H. P. ix, 10.) The facts recently stated in support of the system of Animal Magnetism have been supposed to give some countenance to the ancient belief in the efficacy of amulets. Comm.

SECT. XXIV.—THE DIAGNOSIS OF THE QUOTIDIAN.

The quotidian does not make its attack with a rigor on the first day, but in progress of time, a chill rather than rigor takes place, which is, with difficulty, succeeded by heat, and it has a protracted increase. Yet, it does not make those affected hot, nor their respiration frequent and thick, nor does it make them pant or drink cold water. But they have vomitings of phlegm, and whatever is voided by the belly is cold, crude, and watery, in these fevers. And they have no sweats during the first days, neither have they an interval of freedom from fever. Their colour is white and pale; their urine thin and white, or thick, turbid, and red.

Commentary. We have stated, in the 18th Section, that the ancients were of opinion that quotidians derive their origin from phlegm, that is to say, serum. Comm.

Our author's description is abridged from Galen (Therap. ad Glauc. i.) The other authorities treat of it in much the same terms. Even Alexander, who aims at originality, agrees with Galen and Hippocrates, in referring the origin of quotidians to phlegm. Palladius, in his valuable little treatise on Fever, is at great pains to explain the manner in which putrid extravasated phlegm gives rise to quotidian. He represents the heat as being smothered and concealed like that of moist fuel. Celsus describes all the varieties of the disease very minutely. Constantinus Africanus gives an accurate description of this intermittent. He says that the paroxysm lasts for twenty-four

Comm. (eighteen?) hours, and is followed by an interval of six hours. First, old persons, and then boys, are said to be peculiarly subject to the disease, which is apt to make its attack in cold countries and at cold seasons of the year. It is attended with a great degree of cold, especially of the extremities; the face is swelled, the colour pale, and no thirst is present.

As the Arabians give the same account of the origin and symptoms of quotidians, we need not enter upon a detail of their descriptions. All agree that they are connected with phlegm as an exciting cause, and that the fever is less ardent and well-marked than in the case of tertians.

SECT. XXV.—THE CURE OF QUOTIDIANS.

In curing the quotidian, we use oxymel during the first days, and those things which properly promote the discharge of urine. And, upon the whole, the diet ought to be incisive; but, at its acme, we must look to the stomach, particularly its orifice. We must also prescribe an emetic from radishes taken with food, and phlegmagogue cathartics in abundance, until it subside.

Comm. Commentary. This Section is taken from Oribasius (Synops. vi, 14.)

Celsus enjoins abstinence for three days; after which food is to be taken every alternate day. After the fever has subsided, he recommends the bath and wine.

Galen's treatment is exactly the same as our author's. Alexander, as usual, makes nice distinctions as to the circumstances under which each of the remedies ought to be applied. In general, he approves of incisive and attenuant medicines, but blames Galen for recommending the latter too indiscriminately. He forbids cataplasms and embrocations at the commencement, lest they should occasion a determination of the humours to the affected part.

Synesius appears to have proceeded upon much the same principles as our author, but he makes mention of some additional medicines, such as camphor, wormwood, and the like.

Nonnus recommends, at first, things of an incisive and atte-

nuant nature, and then emetics, after which the phlegm is to be purged by means of colocynth and agaric, and cataplasms and fomentations are to be applied to the pit of the stomach. COMM.

Avicenna lays down the rules of treatment with so great minuteness, that we cannot venture upon an abridgment of them. His principles, however, seem to be the same as those of Galen. Averrhoes recommends, for the first seven days, medicines of an incisive, attenuant, and deobstruent nature. He then gives cathartics which evacuate phlegm, such as turbith, agaric, and hiera picra, but forbids the use of colocynth. He approves very much of friction, the mode of applying which is minutely described by him. Rhases recommends much the same treatment. He, in particular, recommends turbith and agaric along with wormwood and mastich. Haly's remedies are mostly diluents and attenuants. Alsaharavius recommends the same remedies as Rhases.

SECT. XXVI.—ON THE FEVER HEPIALUS, AND THE RIGOR WITHOUT HEAT.

The vitreous phlegm being the coldest of all, if it accumulate in the body, and remain free from putrefaction, it occasions the rigor without heat, which is not attended with fever. In those fevers which are kindled by the humours, it is putrefaction for the most part which kindles febrile heat. If it become putrid, and that through its whole substance, which is rarely the case, owing to its great coldness, it occasions quotidian fever. But when it is half putrid, and not equally through its whole substance, but some parts of it being putrid, and others not, it gives rise to the fever called hepialus, in which those affected have rigors and fever at the same time; for the parts of the humour which are not putrid being scattered through the veins all over the body, occasion rigor; but the putrid parts kindle fever. The word hepialus is either derived from ἡπίας ἅλος, i. e. the sea, which is mild in appearance, although formidable in reality; or from ἡπίως ἀλεαίζειν, i. e. warming gently. And, as this fever is of the quotidian kind, being formed by phlegm, it is to be treated in the same manner; only that it requires remedies as much hotter and more inci-

sive than the quotidian, as its phlegm is colder than that of the other. The rigor without heat stands in need of heating things still more than the hepialus. Wherefore, the composition of three peppers, that from calamint, and still more that from Cyrenaic juice are particularly suitable to this complaint, as also the remedies prepared from castor and the like. You will find a fuller account of these matters in the 46th section, "on immoderate rigor and cold." The fevers called lipyriæ, and the typhoid or smoky, and whatever others are mentioned besides those described, being all of the same kind as the above mentioned, will require the same methods of cure as those which have been mentioned, or will soon be described.

COMM. COMMENTARY. Hippocrates applies the term hepialus to a fever occasioned by amenorrhœa. He briefly notices the lipyria in several parts of his works, (as Coac, 32, 27.) Galen enters minutely into the consideration of the nature and causes of the hepialus, which appears to be a variety of the quotidian intermittent. He says the fever derives its origin from the putrefaction of a thick phlegm resembling melted glass. Its distinguishing characteristic is, that the patient experiences a sensation of heat and rigor at the same time.

Aëtius, and the other subsequent authorities, treat of the fever in the same terms. They recommend, principally, sudorifics and calefacients.

Rhases, Avicenna, Serapion, and Haly treat of the epiala, and the "frigus quod non calefit," as varieties of the quotidian. Alsaharavius gives a very distinct account of the epiala. He says it arises from a gross vitreous phlegm, and is attended with internal heat, and cold of the extremities. The pulse is small and weak, the urine white and unconcocted, and the perspiration suppressed, owing to the constriction of the pores and thickness of the humours. He approves of giving emetics, attenuants, and calefacients. The lipyriæ are treated of by Serapion, Avicenna, Rhases, and Alsaharavius. They are said to be the counterpart of the epialæ, being distinguished by internal cold and external heat. Rhases describes the hepialus as consisting of internal heat and external cold. He says it arises from vitreous phlegm. The lipyria, he states, is one of the worst varieties of ardent fevers.

The rigor without heat, or "frigus quod non calefit," is a febrile affection still met with in warm climates. Comm.

The term *typhus*, now generally applied to the common fever of this country, is used by Hippocrates, in his work on 'Internal Affections,' where he describes five varieties of the disease. They are cases of ardent fever, attended with stupor and insensibility. The term *typhodes* occurs in Galen's 'Commentaries on Hippocrates;' in his work, 'De Diff. Feb.' (i, 9); and 'De Prognost. Puls.' (ii, 9.) Leo defines a typhous fever to be one in which the heat is weak and concealed. (14.) It would appear that the fevers to which the ancients applied the term *typhoid* were either intermittents or remittents. Isidorus thus defines typhous fevers: "Typhi sunt frigidæ febres, quæ abusivè typhi appellantur ab herbâ quæ nascitur in aquis quæ Latinè *forma* atque *status* dicitur: est enim accessionum revolutio per statuta temporum intervalla." (Orig. iv, 7.) The word τύφος occurs in Marcus Antoninus (ii, 17), where Gataker remarks, "Est enim τύφος κυρίως idem quod κάπνος, fumus." Salmasius gives the derivation of the term as follows: "τύφος proprie est fomes, τύφεσθαι enim ἡσυχῆ κάιεσθαι Græci exponunt." (In Tertulliani Librum de Pallio Annot. 318.)

Prosper Alpinus thus explains the nature of typhoid fevers: "Has febres exterius mites seu obscuras intus turbantes Græci *typhodes* appellant, quippe quæ naturam multitudine humorum gravatam, ac fere suffocatam, incendium foras transmittere nequeuntem, significent. Hasque vulgus medicorum appellat, foris mites, intus conturbantes; suntque eæ omnes, admodum perniciosæ." (De Præsag. Vita et Morte Ægrot. i, 10.)

SECT. XXVII.—ON THE CONTINUAL FEVERS.

The continual fevers are allied to each of the intermittents; thus, to the true tertian is allied the causus or ardent fever; to the quotidian, that fever which has a paroxysm every day, but does not terminate in a complete freedom from fever; and, in like manner, to the quartan, that which has an exacerbation every fourth day. For the true causus has all the other characteristics of the tertian, and differs from it only in not commencing with a rigor, nor ending in a complete remission of

the fever. The continual fever which has an exacerbation every day, possesses all the other characteristics of a quotidian, except that it does not terminate in a perfect apyrexy. In like manner, the continual fever which has an exacerbation every fourth day, but does not terminate in a complete apyrexy, is allied to the quartan. A continual fever, therefore, is one which does not terminate in any interval from fever until it is altogether resolved. But when it evinces no remission, it is, indeed, of the same class as the ardent fevers, but differs from them in acuteness.

COMM. COMMENTARY. Hippocrates has stated the alliance between the intermittent and continual fevers. (Epidem., Op. Galeni, ed. Basil, v, p. 362.) In his report of the epidemical diseases of a certain season, he mentions that the continual fevers (συνεχεῖς) were distinguished by an exacerbation every alternate day, after the manner of tertians, and that they were attended with ardent symptoms. He also remarks their tendency to terminate in dysenteries, lienteries, and tenesmus.

Galen marks a distinction between the continual fever (συνεχῆς) and the synochus, which it is necessary that the reader should particularly attend to. He remarks that there are three varieties of intermittents: the quotidian, which arises from putrid phlegm; the tertian, from yellow bile; and the quartan, from black bile. Of continual fevers, arising from yellow bile, there are two species; the one being called synochi, and consisting of one paroxysm from beginning to end; and the other, to which the generic appellation continual (συνεχεῖς) is particularly applied, and which consists of a number of particular paroxyms. Of the continual fevers, some assume the tertian type, having a remission of the fever every alternate day; some the quotidian, and have a remission every day; and others, of rare occurrence, resemble the quartans, in having remissions after an interval of three days. (De Diff. Feb. ii, 2.) In another place he says of synochous fevers that they consist of two varieties, the one arising from an ebullition of the blood, and being produced by the conversion of ephemerals; and the other arising from putrefaction of the blood in persons who are gross and plethoric. (Meth. Med. ix.)

Aëtius treats of continual fevers (συνεχεῖς) in nearly the

same terms as our author, and distinguishes them from the synochi. COMM.

Alexander states that the continual fevers (συνεχεῖς) differ from the intermittents, solely from the humours which occasion the former being of a thicker nature.

Our author's account is nearly copied word for word from Oribasius.

Actuarius remarks that the synochus proceeds from an ebullition of the blood, and the continual fever (συνεχὴς) from putrefaction of the different humours.

Nonnus states very distinctly the difference between the synochus and continual fever. In the latter, he says, there is an incomplete remission of the febrile symptoms, but in the former there is no remission at all.

Synesius and Constantinus Africanus adopt the distinction between the synochus and continual fever, as stated by Galen.

Leo says, a continual fever has no intermission, but merely a remission and abatement of the fever in the decline of the paroxyms.

Celsus, although he does not describe the *febres continuæ* particularly, seems to allude to them in the following account of the quotidians: "Rursus aliæ sic desinunt, ut ex toto sequatur integritas; aliæ sic, ut aliquantum quidem minuatur ex febre, nihilominus tamen quædam reliquiæ remaneant, donec altera accessio accedat; ac sæpe aliæ vix quidquam aut nihil remittant, sed ita ut continuent."

In the works of Rhases, the distinction between the continual and synochous fevers is clearly pointed out. He states that the synochus, or *continens*, is a fever which consists of one paroxysm from beginning to end; whereas the continual, called συνεχὴς by the Greeks, and *f. continua* by the Romans, is allied to the intermittents.

In the barbarous translation of Alsaharavius, there is some difficulty in recognizing this distinction. He first describes a fever, which he denominates *synocha*, which arises, he says, from inflammation of the blood, and is marked by redness of the face, headach, and difficulty of breathing. Second, nearly allied to it is the synochus or februs continua (it ought to be *f. continens*), which arises from putrefaction of the blood. Third, the febris quotidiana, the febris tertiana continua, and the febris

COMM. quartana continua, which are distinguished from their corresponding intermittents by being attended with a partial remission and not a complete intermission of the febrile symptoms.

Avicenna describes the tertian intermittent by the name of febris tertiana periodica, and the continual tertian by that of tertiana continua; the quotidian intermittent by the name of febris phlegmatica periodica, and the continual quotidian by that of febris phlegmatica inseparabilis, or latica; the quartan intermittent by the name of quartana periodica, and the continual quartan by that of quartana continua. The synochus he calls by the name of febris sanguinis; and, in treating of it, remarks that Galen is guilty of inconsistency in stating the proximate cause of it; for that in one place he says it arises from the blood, and in another from bile. Averrhoes states the same objections to Galen's account of the origin of synochous fevers.

Avenzoar marks the distinction between the intermittent and the continual quotidians, tertians, and quartans.

We have been more than usually minute in explaining the opinions of the ancients with regard to the Continual fevers, because much confusion has arisen in modern nosological treatises and works on medicine, from the distinction between them and the synochi not being properly understood. After what has been said, the medical reader will readily perceive that the Continual fevers (συνεχεῖς) of the Greeks are the same as the Remittent fevers described by Pringle, Monro, and other English authors of that age who have treated of fevers.

SECT. XXVIII.—THE DIAGNOSIS AND CURE OF SYNOCHOUS FEVERS.

Synochous fevers are produced sometimes by effervescence of the blood alone, and sometimes by putrefaction of the same, arising from obstruction, and have, therefore, but one paroxysm from beginning to end. The symptoms are, pulse very great, strong, quick, dense, equable; but they are not pungent; and the urine is little different from the natural. The cure of them consists in bloodletting *ad deliquium*. And those who are affected with these fevers, and are not bled, run the most imminent danger. But if anything should prevent us from having recourse to phlebotomy, we must use such other re-

medies as are calculated to remove obstructions, those which evacuate, and such as will allay the effervescence of the blood. But when in these cases you remark symptoms of concoction of the humours, and there is neither inflammation, œdematous swelling, nor scirrhus in any important part, nor any part cold, so as that the evil may be determined to it, you may boldly give cold water, more especially if the patient has been accustomed to cold drink.

COMMENTARY. After what we have said in the preceding section, and in the section on Ephemerals, it will be unnecessary to enter into any detailed account of the ancient opinions with regard to the nature of synochus. It is to be distinctly recollected, however, that all the authorities from Hippocrates to Actuarius held, with Galen, that the synochi are produced either by an ebullition of the blood, as in the case of neglected ephemerals, or from putrefaction of this fluid. (See Meth. Med. ix.) COMM.

In other parts of his works Galen seems, indeed, to hold that these fevers are connected with corruptions of the bile, and we shall not attempt to defend him from the charges of inconsistence and contradiction with which he is assailed by Avicenna and Averrhoes. His treatment is well deserving of our attention. He inculcates with becoming earnestness that the great remedies for synochous fevers are bleeding and cold drink. He approves of bleeding *ad deliquium animi*, and relates an interesting case of its good effects. (Meth. Med. ix.) When the pulse is large and firm, he insists that no considerations of age, strength, or any other circumstance, ought to deter the physician from abstracting blood freely. He directs the apartments of the sick to be kept cool and well ventilated, and to have the floors sprinkled and rendered fragrant by means of suitable flowers. The diet is to be of a light and diluent nature, especially at the acme of the fever. (Therap. ad Glauc. i.) He forbids the bath when inflammation is present. (Hyg.)

Aëtius conducts the treatment upon the same principles as Galen, and the directions which he gives for the application of the different remedies are most important. He states most decidedly, that unless venesection is had recourse to, the patient will be in the utmost danger, and can only be saved by the strength of his constitution, or some critical evacuation. When

COMM. the stomach is loaded, however, he forbids depletion, because, by emptying the veins, the distribution of the crudities in the *primæ viæ* will be accelerated. When the menstrual or hemorrhodial discharge is expected, he directs us to bleed less profusely than otherwise. Persons of a hard, sanguine, and compact habit of body are said to bear bleeding best. In practising venesection, he directs the physician to pay more attention to the strength of the patient than to the period of the fever. He is particularly earnest in recommending the use of cold drink: he directs it to be given at the acme of the disease, but not at the commencement. He forbids us to administer it freely when there is obstruction or inflammation of an internal viscus; and states many serious evils which may arise from the unseasonable administration of cold water, although it be an excellent remedy when given at the proper time. With regard to diet, he directs nothing but ptisan to be given for the first three days. On the fourth he recommends the bath. Through the whole course of the fever the food is to be light, unless the powers of the patient be very feeble.

As the other Greek authorities differ in no material respect from the principles of treatment laid down by Galen and Aëtius, we need not enter upon any minute exposition of their views of practice. As a specimen, however, of the practice of the later authors, we shall briefly mention that of Synesius and Constantinus Africanus. They approve of bleeding, unless the stomach be loaded with crudities; in which case they forbid the operation until these are concocted or discharged. They recommend diluents; and, if the belly is constipated, clysters, with decoctions, containing tamarinds, damascenes, manna, and the like. To remove the remains of the febrile excitement in the decline of the fever, they direct medicines of a refrigerant nature to be given, such as camphor, the seeds of melons, cucumbers, gourds, and the like.

Palladius gives the following directions for the treatment of fevers in general. In all these diseases the skilful physician ought to know and understand accurately the constitution and temperament of the sick; and the peculiar form of the fever, and the formation, movement, onset, increase, and acme of every disease, and the analogies of the paroxysms, and the returns of the periods. And the first and general object in all these diseases is to clear the body of impurities, and render it perspirable;

and the second in order is to contend with the prevailing cause; for the work of the physician in all cases is to rectify whatever is amiss about the body. (De Febribus, 29.) Comm.

Celsus recommends venesection in all fevers at the commencement, provided the patient is not very young, weak, or has crudities in his stomach; but after the fourth day he does not approve of it. He also makes some ingenious remarks on the contrary methods of giving water and wine in cases of fever. He recommends the latter when there is cold, torpor, and restlessness. He likewise mentions the affusion of cold water and oil, with the intention of changing the morbid state of action.

In the Epistle of Vindicianus, physician to the Emperor Valentinian, there is an interesting history of a fever, arising from indigestion and obstruction of the bowels, brought on by excess in eating and drinking. In this case Vindicianus, in opposition to the advice of the other professional attendants, would not administer a clyster, and gave his patient nothing but salt and water, which procured first copious perspirations, and afterwards free evacuations of the bowels. He then directed him to use the bath, and completed the cure by giving wormwood to remove obstructions. This is a well-marked case of intestinal fever. (Fabricii Bibl. Græc. t. xiii.)

We may state the general characters of the urine as given in an interesting little treatise, 'On the Urine,' lately published by Ideler. In synochous fevers, as being connected with fulness of blood, the urine is red, thick, and indicating by its colour and consistence the want of concoction. (De Urinis Commentatio.)

Haly Abbas, during the first three days, strongly recommends venesection, which, he says, will either have the effect of cutting short the fever at once, or of rendering it milder. His other remedies are altogether refrigerant, consisting of acidulated drinks, and gentle purgatives, such as prunes, tamarinds, and the like. Alsaharavius, in like manner, recommends depletion, and the refrigerant plan of treatment.

Serapion strongly recommends bleeding, *ad deliquium animi*, which, he says, will probably have the effect of procuring discharges from the bowels, and of promoting perspiration. He admits of venesection even after the sixth or seventh day, when other circumstances indicate it. He further prescribes refrigerant remedies, such as tamarinds, cassia-fistula, and the like.

Comm. Averrhoes, although he approves of venesection, condemns Galen's direction to carry it the length of bringing on *deliquium animi*. He also cautions against carrying the administration of cold drink too far.

Avenzoar strongly recommends bleeding *ad deliquium*. Avicenna likewise approves of this practice. When the strength does not permit to carry depletion so far, he directs us to open the temporal veins, or to abstract blood by cupping. In such cases he also recommends purgatives and refrigerant medicines. Towards the conclusion of the fever he directs the trochisks of camphor to be given.

Rhases gives an excellent account of synochus. His remedies are bleeding, gentle purgatives, acidulated drinks, restricted diet, and complete abstinence from wine. He particularly recommends aloes as a purgative. (See, in particular, Contin. xxx, v, 2.) He approves of the bath, but prefers delaying the use of it until the decline of the fever. He is very decided in recommending bleeding, unless the patient be of a weak constitution, or his system loaded with crudities. After the fever is concocted, he approves of giving cold water freely for drink.

SECT. XXIX.—ON THE DIAGNOSIS OF ARDENT FEVERS.

The following symptoms accompany ardent fevers: tongue dry, rough, and black, griping of the stomach, excrements pale, strong thirst, watchfulness, and sometimes delirium.

Comm. Commentary. Our author's description of the *causus*, or ardent fever, is taken from Hippocrates (de Rat. Vic. Acut.), where the commentary of Galen is worth consulting. According to Hippocrates, the causus is generally produced in the summer season, owing to the veins becoming dry and attracting bilious humours. In other parts of his works he gives an account of several varieties of the disease, differing considerably in character from that described in the above-mentioned work. For example, one variety mentioned in his 'Epidemics' was distinguished by the absence of thirst and delirium, and by the paroxyms occurring on the even days. (See Galen's Commentary, Opera, ed. Basil. t. v, 424; also, de Morbis, i, 27; and

Coacæ, 130.) He further describes, under the head of causus, various cases of febrile complaints after child-birth and abortion, which would now be called puerperal fevers. (Epidem. iii.) COMM.

Aretæus delivers a most striking description of ardent fevers, which we regret that our limits prevent us from giving at full length. The following are some of the most important symptoms: the heat acrid and subtile, especially in the internal parts, desire of cold air and of cold things, the extremities cold, the pulse dense and small, the eyes clear, bright, and reddish; and, if the fever go on increasing, delirium, oblivion of every thing, lividity of the nails, frequent respiration, profuse perspiration about the forehead and neck, coldness of the body, and at last a complete collapse marked by a return of the powers of reason and certain indications of a prophetic spirit. This is but a meagre outline of his matchless delineation of the phenomena of causus.

As all the Greek, Latin, and Arabian writers treat of causus in nearly the same terms as Hippocrates, we shall be very brief in noticing their descriptions. According to Alexander, there are two varieties of causus, the true and the spurious, the former being marked by intense thirst, bilious stools, tongue rough and black; and the latter by the thirst being moderate, the tongue not black, and the stools consisting not of bilious matters, but rather of corrupted food. The former kind is said to be occasioned by a bilious, and the latter by a pituitous humour. Aëtius describes the disease in the same terms as our author. He says that it is produced by putrefaction of yellow bile. Palladius says that ardent fevers are occasioned by an erysipelatous inflammation of the lungs, or by the putrefaction of bilious humours which have become immoderately heated. The Arabians describe it exactly as the Greeks. According to Avicenna, there are two varieties of the disease, the bilious and the pituitous. The inseparable symptoms of the disease are, he says, concealed heat, roughness, and, at last, blackness of the tongue. There is no perspiration until after the crisis. For the most part the heat is not strong in the external parts, but is particularly so in the internal. Rhases states that the ardent fever called καῦσος by the Greeks belongs to the class of tertians, only that in the former the heat is more intense, and the paroxysms do not terminate in a complete intermission of the

COMM. febrile symptoms. The symptoms, he adds, bear a considerable resemblance to those of the tertian intermittent, but are more strongly marked. According to Alsaharavius, the causus, or ardent fever, is occasioned by heated bile collected in the veins adjoining to the heart, stomach, or liver, and its symptoms resemble those of tertians, but are more intense.

From the above exposition of the opinions of the ancients regarding the causus, or ardent fever, the medical reader will readily recognize its identity with the bilious remittent fever of Sir John Pringle and other English authors. If there were any doubt on this head, it would be set aside by the description of the symptoms of ardent fever which is given by the late Dr. Robert Jackson, as they were manifested in his own person during a severe attack of it. (On Fever, 403.)

Some late writers have confounded the causus of the ancients with synocha, or inflammatory fever. But, as we have said, and as was correctly stated by Baccius, the causus was decidedly of the continual or remittent type, and nearly allied to the tertian intermittent. (De Thermis.) Hoffman remarks that it seldom appears in the more temperate parts of Europe, but is very common in Asia, Greece, and Italy; and hence the frequent mention of it in the works of Hippocrates, Galen, and Aretæus. (Oper. t. ii, § 2, c. 2.)

Homer says that the dog-star brings many fevers upon unhappy mortals (Iliad, xxi, 31); and his commentator Eustathius remarks that the poet correctly refers the origin of ardent fevers to the heat of the dog-days.

SECT. XXX.—THE CURE OF ARDENT FEVERS.

Either of the following things must take place, that this fever may terminate completely; the bilious humours must either be evacuated or extinguished. They are evacuated then by sweating, vomiting, or purging downwards; but they are extinguished by cold drink, with which we have entirely cured ardent fevers. For diet, those in causus should not take water alone, nor mead alone, but boiled mead much diluted with water; for the food of such persons ought to consist entirely of drinks. The bath will suit with those only affected with causus

who are free from all inflammatory and erysipelatous swelling. And if they exhibit signs of concoction, it will suit still better with them; but not so if the fever be occasioned by a saltish humour. These should be supported with the juice of ptisan.

COMMENTARY. Our author's directions respecting the treatment are mostly taken from Hippocrates (de Rat. Vict. Acut.) Hippocrates allows venesection only when the attack is violent. He approves of the application of cold water to the surface. Archigenes, as Aëtius informs us, sponged the head and chest with cold water during the acme of ardent fevers. (iii. 159.) His own treatment, which is borrowed from Philumenus and Galen, consisted of cooling remedies internally and externally, such as drinking cold water and other things of a refrigerant nature, using cold applications, and the cold bath. (v, 28.) Alexander, Oribasius, Synesius, and Constantinus Africanus treat the causus upon the same plan as our author. They say nothing of bleeding. Celsus likewise omits to make mention of venesection, but recommends refrigerants, and especially cold water to be given, even to satiety. He forbids it, however, when there is any affection of the internal viscera, and when there is a cough. He informs us that Asclepiades, of Bithynia, strongly recommended gestation for the cure of this fever. COMM.

Averrhoes abstracts blood when there are symptoms of plethora, gives gentle purgatives, such as tamarinds, and allows the patient cool drink and cool air. Haly Abbas treats the causus entirely upon the refrigerant plan, with cold drink, cooling fruits, fresh air, gentle laxatives, such as prunes, and by cold applications to the skin. Alsaharavius conducts the treatment upon much the same principles. When the patient is troubled with protracted watchfulness, he directs us to rub the temples with the juice of poppies, lettuces, and coriander. Avicenna also speaks favorably of these soporifics, but does not in general approve of bleeding. The treatment recommended by Rhases is altogether refrigerant. He directs us to clear away the asperities of the tongue, and then to give cooling and acid drinks. When there is no inflammation of any internal viscus, he permits water cooled with snow. He says nothing of venesection. However, some of his authorities, as quoted in his 'Continens,' recommend bleeding. They seem in general to have approved

COMM. of keeping the patient in a cool room perfumed with aromatic and fragrant herbs. One of them approves of applying over the stomach a robe moistened with a fluid prepared from camphor, rose oil, &c.

We omitted to mention that Hippocrates states that children at the breast are subject to attacks of causus, by which of course he meant the infantile remittent fever, first well described some years ago by Dr. Butter.

SECT. XXXI.—DIAGNOSIS AND CURE OF FEVERS WITH AN ERYSIPELATOUS AFFECTION.

Fevers accompanied with an erysipelatous affection about the viscera, may be known by the vehement effervescence and violent pain in the part, also, by the thirst and inordinate burning; in a word, by the symptoms of very acrid bile putrefied along with a deficient blood. They are to be treated in this manner: the patient must abstain altogether from the bath, and at the acme of the complaint, use very cold water in the most decided manner. Yet it must not be used at the commencement, but cold things are to be applied externally; and if this is not sufficient, they must be taken internally. Lettuces and such like things are particularly befitting. The juice of the lettuce is likewise a seasonable application externally, also, that of the house-leek (*semper-vivum*), and such like cooling things. We may use the following application, which is an excellent one: Squeezing out the juice of some cooling thing, we put it into a mortar with purslain, then pound and strain it; at the time of using, we mix a little polenta with it, and place it in cold water to cool it. A piece of cloth folded double is to be put into it, and afterwards applied to the hypochondrium, and not suffered to remain, but another cold one must be substituted. We sometimes mix the oil of unripe olives.

COMM. COMMENTARY. This section is mostly taken from Oribasius, (Synops. vi, 20.) On erysipelas of the lungs consult Hippocrates, (De Morbis, i, 13, and ii, 53.) Hippocrates says in one of his aphorisms (vi, 25), that it is dangerous when an external erysipelas is determined internally, but favorable when an internal

erysipelas is determined externally. He describes an epidemical erysipelas which was attended with extensive gangrene of the limbs, but did not often prove fatal. (Epid. i.) Comm.

The following are the symptoms of fever connected with erysipelatous inflammation, as detailed by Alexander: The patient experiences thirst more strikingly than in any other case, throws the clothes off his body, has exacerbations every third day, with bilious and ichorous discharges from the bowels; those in whom the erysipelatous inflammation is seated in the lungs have not so intense thirst, but breathe thick and large, their cheeks are red, tongue rough, they are delirious, and long rather for cool air, and are more benefited by it than by cool drink, which ought rather to be given to those who have erysipelatous inflammation in any other part, whereas those in whom the lungs are affected ought to be supplied with cool air. In ordinary cases he approves of giving cold water to extinguish the fever, but says that he has seen patients brought to imminent danger by the unseasonable application of cold cataplasms and clysters.

Aëtius states that fevers are kindled by the parts about the bowels, liver, and lungs, being attacked with erysipelas. Like our author, he approves of cold drink, cool air, and cold applications to the part affected. (v, 88.)

The acute affection of the vena cava, which is minutely described by Aretæus, ought probably to be ranked with the diseases which we are now treating of. He himself is in doubt whether to consider it as a species of causus. Like the latter, he says, it has a tendency to pass into syncope. (De Sign. Morb. Acut. iii, 8.) He recommends for it venesection and the refrigerant plan of treatment. (Cur. Morb. Acut. ii, 7.) We have stated in the xxixth section that Palladius refers one variety of ardent fever to erysipelas of the lungs.

A similar account of these affections is given by Avicenna, (iv, i, 4, c. 13, 14, and 15); and by Rhases (ad Mansor. x, 15, *alibique*.)

We can draw no information from modern works to illustrate the opinions of the ancients respecting the febrile affections treated of in this section. It does not seem to be suspected now that erysipelas ever attacks the lungs or bowels; and yet, as this disease when it occurs externally is known to be seated principally in the epidermis, and as the epithelium, or membrane

COMM. which lines the internal cavities, is admitted to be a prolongation of it, (see Kaau Boerhaave, Perspiratio Dicta Hippocrati,) it would seem probable *a priori*, that the diseases of both portions of it should be alike. That fevers are often complicated with ardent affections of the lungs and bowels, and bilious symptoms, we all admit; and it was, no doubt, to such febrile affections that the ancients gave the name of fevers from erysipelas—erysipelas, as we shall see afterwards, being referred by them to the state of the bile. One cannot but admire the sagacity of Hippocrates in tracing the connexion and resemblance between the diseases of the epidermis and those of the epithelium. (See Littré's Hippocrat. t. iv, 419.)

SECT. XXXII.—DIAGNOSIS OF HECTIC FEVERS.

The hectic fever is not only seated in the fluids and spirits, but also in the solid parts. It is unaccompanied with pain, and those affected with this fever imagine that they have no fever at all, for they are sensible of no heat, all the parts being heated equally. There are two kinds of hectic fevers, the one for the most part supervening upon ardent fevers which have been protracted so long as to consume in time all the juices in the body of the heart; the other may come on while it remains plentiful. The former constitute not only hectic but marasmus. Those that come on while the juices of the heart remain, seize upon the body of the heart, and hence the febrile flame is kindled, like the flame of a lamp from its wick. This is one of the modes of formation. The other mode is, when they make their attack originally, commencing like ephemeral fevers, from grief, anger, or much fatigue attended with heat. These may be cured without difficulty; but those of them which have terminated in marasmus, it is impossible to cure. A hectic fever which is running into marasmus may be easily recognized. You may see the patients' eyes immeasurably hollow, dry rheums determined to them, and they have a certain squalid appearance. The vital bloom of their colour is gone; their forehead is parched and stretched; they constantly wink as if asleep, and yet the affection is not sleep, but an inability to keep awake; their temples are collapsed; and what remains,

but the bones and skin alone? If you lay bare, and examine the parts about the abdomen, you will fancy that none of the entrails and intestines remain, and that the hypochondrium is forcibly drawn upwards. The skin is parched in the last extreme, the pulse slender, dense, and hard. The heat on the first application of the hand seems faint, but soon afterwards feels acrid and pungent. While, therefore, any of the natural moisture remains, the fever is only hectic; but when the humidity runs the risk of being altogether consumed, a true marasmus is formed.

COMMENTARY. Our author has copied from Oribasius (Synops. vi, 21), who in his turn is indebted to Galen (de Diff. Feb. i, 11.) A similar account is given in somewhat fuller terms by Aëtius (v, 92.) See also Alexander (xii, 4.) We shall merely give his explanation of the characters of the pulse. It is hard and small, because the vessels have become dry and contracted; it is dense (frequent?) because the necessities of the system require it to be so, (namely, in order to make up for the reduced expansion of the artery); it is feeble, owing to the weakness of the vital powers; and slender, because the vessel does not admit of being stretched in breadth. Nonnus and Actuarius derive their views from Galen. According to the latter, hectic fever is a very dangerous disease when it arises from the conversion of any other fever, but when connected with inflammation or scirrhus of any vital organ it is almost incurable. Palladius says that the hectic is an unceasing fever, wasting and consuming the natural humidity of all the members, and supervening for the most part upon acute and ardent fevers, but sometimes arising from sympathy with some vital organ. He states it as a characteristic of the hectic fever, that food increases the febrile heat, in like manner as water poured upon unslacked lime enkindles heat. This comparison is borrowed from Galen, and is repeated also by Alexander and Nonnus. Palladius, like our author, represents marasmus as the termination of the hectic fever. It is distinguished, he says, by prostration of the natural faculties, aridity, and wasting of the body, which becomes dried and parched like a tree deprived of its juices by exposure to excessive heat. COMM.

According to Haly Abbas, hectic fevers commonly arise either

COMM. from the conversion of semi-tertians, or from abscesses of the lungs, whence heat is sent to the heart, and from it is diffused over the system. (Theor. viii, 7.) Alsaharavius states that hectic fevers arise from protracted ephemeral or putrid fevers, or from sympathy of the system with ulceration of the lungs, bladder, or liver, or from any chronic and prolonged disease. (Pract. xxxii.) Averrhoes represents the hectic as supervening upon ephemeral and putrid fevers. He ridicules the comparison of the effects of food on the febrile heat to those of water poured upon lime. (Collig. iv, 33.) Avenzoar gives the same account of hectic as our author. (iii. 3, c. 13.) Serapion's account, although borrowed from the Greeks, is distinct and curious (vi, 11.) See also Rhases (ad Mansor. x, 3, *alibique.*) He and Haly Abbas repeat the graphic delineation of a person in the last stage of hectic fever, borrowed by our author from Galen, who seems to have had in view a similar description of a person sinking of consumption, given by Aretæus. (De Morb. Chron. i, 8.) Avicenna's account of the nature and causes of hectic fevers is so ample, that we regret our limits will not permit us to do justice to it. The principal causes of them which he enumerates are ephemeral and putrid fevers, and abscesses of the lungs and liver. The pulse, he says, is hard, small, frequent, and weak, and may become *myurus*, if the fever pass into the state of marasmus. He gives, principally from Galen (de Marasmo), an interesting description of what he calls the *hectic of old age*, but which Galen calls *old age from disease*. Its symptoms, as described by these authors, are coldness and aridity of the body; the pulse slow, small, and rare, unless very weak; the urine white, thin, and watery. (iv, 1, 3.) Franciscus de Pedemontio, a writer of the fourteenth century, in like manner pronounces the hectic of old age to be a dry intemperament of the system, and recommends for it a calefacient and moistening regimen.

SECT. XXXIII.—THE CURE OF HECTIC FEVERS.

Those affected with hectic fevers should be well supplied with food from the commencement, on account of the pungency of the humours. The best cure is a moistening diet. You ought therefore to give for nourishment the juice of ptisan, and broths

of chondrus, with a little bread in addition; and to treat the patient with a draught of moderately cold water, when neither inflammation nor putrefaction of the humours is present. But if you conclude that the lesion is great, you must proscribe the cold water, and have recourse to the cooling applications externally. To those affected in this manner, baths are at all times proper.

COMMENTARY. This section is taken from Oribasius (Synops. vi, 22.) It will be remarked that our author's treatment consists of diluents and refrigerants internally, with cold applications and baths. It is entirely derived from Galen. Galen defends, in very strong terms, the use of the cold bath, which had been condemned by a celebrated physician of the name of Philip. (Meth. Med. x.) He admits, indeed, that an inflammatory or erysipelatous affection of a vital organ, and a redundance of crude and putrid humours in the body, may compel us to abstain from the bath; but, in all other circumstances of hectic fever, he insists that it is the *remedium unicum*. He also recommends cold drink and cold applications to the part primarily affected. He speaks favorably also of the internal administration of refrigerants, such as lettuces, which may also be applied externally. (De Marasmo.) For diet, he recommends articles of a diluent and cooling nature, such as ptisan, bread steeped in cold water, and the milk of asses. (Meth. Med. l. c.) COMM.

Aëtius, in like manner, recommends the bath, unless the use of it be contraindicted by the inflammation of some vital organ, or a fever enkindled by the putrescency of the humours. He gives minute directions for the application of the bath, the amount of which is this, that, under certain circumstances, it will be most prudent to use the tepid bath before the cold. In all cases he directs the body to be rubbed with oil before going into the bath, and to be gently rubbed with towels after coming out of it. He greatly praises the milk of asses, which he recommends to be drunk warm.

Alexander also forbids the use of the bath, when inflammation of any vital part is present. He approves greatly of the milk of asses for food. He allows wine only when the patient is of a cold and dry intemperament. He inculcates the neces-

COMM. sity of ascertaining whether the hectic fever and marasmus be connected with chronic inflammation of any internal organ, such as the stomach, mesentery, colon, liver, kidneys, womb, lungs, or diaphragm, in order that the remedies may be applied to the seat of the disease. We need not go over the practice of the subsequent Greek authors, as they follow servilely the doctrines of Galen.

According to Avicenna, the great indications of cure are dilution and refrigeration. To the class of refrigerant remedies he refers barley-water, the milk of asses, and trochisks of camphor, with cooling epithemes and ointments. To the class of diluents he refers the bath, about the administration of which he is very particular. He directs us to use the tepid bath at first, and gradually bring the patient to bear the cold. When it can be borne, he says, the cold bath should be taken immediately after the hot. He also speaks favorably of the affusion of tepid water.

Haly Abbas directs us, when the symptoms of consumption are fairly set in, to administer before sunrise trochisks containing camphor, poppies, &c. to mitigate the cough. Like most of the other authorities, he speaks favorably of the milk of asses and of women for food. But, upon the whole, his greatest dependence seems to have been upon camphor. (Pr. iii, 26.)

Alsaharavius directs us first to make the patient go into the warm bath, and immediately afterwards to plunge him into the cold. (Pract. xxxii.)

What Avenzoar most particularly recommends is the tepid bath of fresh water, which he directs to be taken several times in the day. He speaks favorably of goat's milk. (iii, 1, 13.)

Averrhoes recommends nearly the same practice; but he says that the bath ought to be gradually applied. He approves of the milk of women, asses, and goats, and also of refrigerant herbs. (Colliget. vii, 15.)

Serapion is very minute in his directions about the asses' milk. He says the animals should be fed upon juicy and cooling herbs, such as grow by the side of rivers. He also directs us to medicate the bath, by previously boiling in it refrigerant herbs, such as gourds, barley, and violets. (vi, 11.)

Rhases' directions, although they possess, perhaps, little originality, are in the highest degree interesting. He recom-

mends for food fishes, cooling herbs, such as mallows, lettuces, citrons, cucumbers, &c. and the milk of asses or of goats. He especially commends the tepid bath, and rubbing with oil afterwards. He also speaks of applying to the chest cloths soaked in rose-water, which has been cooled in snow. When these cold applications bring on shivering, he directs them to be somewhat warmed. He forbids copious draughts of cold water. He recommends cool and humid air, and cautions to avoid smoke. When the belly is constipated, he gives opening medicines, such as prunes and manna. When, on the other hand, the belly is loose, he recommends astringents. He particularly commends trochisks of camphor, which, he says, will cool the heat of the heart, liver, or chest. (Ad Mansor. x, 3; see also Contin. xxxi.) In the latter work he informs us that physicians were divided in opinion regarding the use of the bath in hectic fever. He forbids the cold bath and cold drink when the patient is much wasted, because the cold penetrates to the vital organs and impairs them. COMM.

SECT. XXXIV.—ON SEMI-TERTIANS.

As a tertian paroxysm commences with a rigor, and a quotidian without one, the fever composed of both brings on a degree of shivering, which is less than a rigor, and greater than chillness, as being a mixture of these two extremes. Whence, this fever has not improperly got the name of semi-tertian. These fevers are formed in two ways, either the two paroxysms uniting into one, or being mixed together from the commencement. When, therefore, the tertian prevails, the fever is attended with a strong shivering, and has even a certain degree of rigor at the attack. Such a fever also soon becomes hotter and more ardent, and brings on some vomiting of bile, or a discharge of it downwards, or by a sweat. When the other, the pituitous, prevails, there is coldness of the extremities, but little shivering; neither are they accompanied with thirst, nor are they ardent. But when the tertian intermittent and continual quotidian are equal in magnitude, the commencement of the paroxysm is with shivering; and when that from phlegm prevails, there are contractions and shiverings; but if the hotter

species prevail, they soon acquire heat. This is the true semi-tertian, being a fever formed from an equal combination of both, a tertian intermittent, and a continual quotidian. But that which is not the true semi-tertian has either more of the bilious, or of the pituitous character; which species is of easiest cure, the smaller humour being readily overcome by the prevalence of the greater, or by the aid of art. When the pituitous state prevails, we must use especially the remedies mentioned for the quotidian; or, if yellow bile, those for the tertian, always bestowing most attention upon that which is most urgent, but not neglecting the other entirely.

COMM. COMMENTARY. The reader may find histories of the semi-tertian in the Epidemics of Hippocrates, where see the Commentary of Galen. Our author's account is condensed from Galen (de Diff. Febr. ii, 2, and de Typis, 4.) See Aëtius (v, 81); Actuarius (Morb. Dig. ii, 1); Nonnus (142); Celsus (iii, 8); Palladius (21.) Celsus describes it as the second species of tertian in the following terms: "Alterum longe perniciosius, quod tertio quidem die revertitur, ex octo autem et quadraginta horis fere sex et triginta per accessionem occupat, interdum etiam vel minus, vel plus; neque ex toto in remissione desistit, sed tantum levius est. Id genus plerique medici ἡμιτριτᾶιον appellant." He approves of bleeding at the commencement, and of a diet that is nutritive without being heating.

Palladius says that the semi-tertian is compounded of a tertian intermittent, and a continual quotidian, the quotidian paroxysm taking place every day, and the tertian every alternate day. He ascribes their origin to a mixture of putrid bile and phlegm. (21.) Haly Abbas gives a similar account of it. He calls it a fever compounded of a tertian and quotidian, and remarks that it has a tendency to pass into hectic. He treats it with diluents and refrigerants. (Pract. iii, 17.) Avicenna gives a very detailed account of the symptoms and cure of the semi-tertians. He remarks that the fever is apt to be protracted and to pass into the hectic. (iv, 1, 4.) See Rhases (Cont. xxxi.) All his authorities agree in describing it as a compound of the tertian and quotidian, having a severe paroxysm the one day and a slighter the following. It is said to be generally protracted to the fortieth day.

Platearius, and the other earlier modern writers, describe the semi-tertian in nearly the same terms as the ancients. It is a species of fever still occasionally met with in warm climates. (See Littré's Hippocrates, t. ii, 569.) COMM.

SECT. XXXV.—ON EPIDEMIC DISEASES.

We call those diseases epidemic and common, that attack many persons together; which, having a common origin, have also a common cause. Common diseases are produced by common food of a bad quality, drinking of bad water, inordinate fatigue, the want of the customary exercise, deprivation or repletion from the prevalence either of a famine or of great abundance. The nature of the country will also often occasion common diseases, either from its lying adjacent to marshes, or to some deep pit, which emits a deleterious and pernicious exhalation. These things are constantly occurring. But the atmosphere which surrounds us may alter the temperaments, by being hotter, colder, or more humid than ordinary. For to other causes we are not all exposed together, nor do we come in contact with them for the whole day; but the ambient air is diffused around all, and is inhaled by respiration. Now, the bodies of animals must undergo a change along with these changes as to temperature. He, therefore, who is acquainted with these matters, will not only be able to predict the diseases which are to arise from every state of the atmosphere, but will be able also to prevent them by substituting a counteracting regimen to the intemperament of the air. Wherefore, those bodies which are disposed to a certain disease, from a peculiar intemperament, will be affected by a similar temperature of the surrounding air. But those of an opposite temperament to the atmosphere will not only not be hurt but will be improved; the excess of their intemperament being overcome by the opposite excess. He that is acquainted with these things will preserve the health, by superinducing the contraries to the constitution of the body; sometimes perhaps using refrigerants, and sometimes heating things, cooling with water, using restricted exercise and food, and plenty of dilution; and warming, by means of increased clothing, exercise, more food and less

drink. And, by kindling a great pile, one may change the air from a humid state to that which is dry and hot, as they say was done by Acron of Agrigentum.

Comm. COMMENTARY. This Section is mostly taken from Oribasius (Synops. vi, 24, and Euporist. 1.)

The works of Hippocrates contain many interesting remarks on the origin and nature of epidemics. He states that diseases in general may be said to arise either from the food we eat or the air we breathe. When, therefore, a disease seizes on a multitude of persons of different ages, sexes, and habits, he justly infers that it must arise from the latter cause. (See de Flatibus, Epidem. cum Commentariis Galeni.) The fevers described by Hippocrates, in his 'Books of Epidemics,' are in general intermittent and remittent fevers. In his first and third books he describes forty-two cases of fever, twenty-five of which had a fatal termination. They had evidently been selected from a larger number. The descriptions are rigidly confined to a detail of the characters of the season and the symptoms of the epidemic. In general, scarcely any remedial means are mentioned. In some of the cases slight exanthemata speedily disappearing are mentioned among the symptoms. These are more likely to have been *petechiæ* than the typhous eruption. It is reported of Hippocrates, that, like Acron of Agrigentum, he changed the morbific state of the atmosphere at Athens by kindling fires. (Galen, Therap. ad Pison; Aëtius, v, 94.) Acron's method of purifying the atmosphere is mentioned by Plutarch (de Iside et Osiride.) For an account of Acron, see Fabricii (Biblioth. Græc. xiii, 32); Conringii (Introduct.) and Mangeti (Bibl. Med.) Pliny says of fire as a corrective of the state of the atmosphere, "Est et ipsis ignibus medica vis. Pestilentiæ, quæ solis obscuratione contrahitur, ignis suffitu multiformiter auxiliari, certum est. Empedocles et Hippocrates id demonstravere diversis locis." (H. N. xxxvi, 69.) With the same intention Simeon Seth proposes fumigations with frankincense. The historian Herodian relates that fumigations with aromatics were recommended as a preventive of the plague. (i.)

Galen, in like manner, attributes the origin of epidemics to the state of the atmosphere in a great measure, but also holds that the nature of the country may contribute; as, for example,

its vicinity to a gulf like the Charonian, from which miasmata are exhaled that taint the air and occasion diseases. In many passages of his 'Commentary on the Epidemics' of Hippocrates, he states that epidemical diseases arise from the condition of the country in which they prevail. Lucretius accounts for the prevalence of epidemical diseases upon similar principles: COMM.

> "Atque ea vis omnis morborum, pestilitasque,
> Aut extrinsicus, ut nubes nebulæque superne
> Per cœlum veniunt, aut ipsâ sæpe coorta
> *De terrâ surgunt*, ubi putrorem humida nacta est,
> Intempestivis pluviisque, et solibus icta."
>
> (De Rerum Nat. vi, 1100.)

Silius Italicus appears to refer an epidemical fever to the same cause. (xiv.)

In his work, on the 'Varieties of Fever,' Galen expresses his opinion on this subject very fully. He remarks that an atmosphere of a hot constitution, such as generally prevails at the time of the rising of the dog-star, having been inhaled by the heart, increases the heat in it, from which it is diffused all over the system, and enkindles a febrile affection. In pestilential constitutions, he adds, it is principally by the respiration that the disease is contracted, although sometimes it may arise from the fluids of the body being disposed to putrescency, which is increased by the condition of the atmosphere; but for the most part epidemical complaints derive their origin from the atmosphere being tainted with putrid exhalations. The putridity of the atmosphere may be occasioned either by a multitude of dead bodies which have not been burnt, as is apt to happen in wars, or it may arise from the exhalations of certain marshes or lakes in the summer season, or sometimes the inordinate heat of the atmosphere may give rise to them, as happened in the case of the Athenian plague, according to the testimony of Thucydides. And here we must digress to remark, that Homer evidently ascribes the plague which attacked the Grecian army to the great heat of the sun. See the Commentary of Eustathius on the beginning of the Iliad; Ammianus Marcellinus (xix); Heraclides Ponticus (Allegor); and Macrobius (Saturn. vii, 5.) Galen, however, inculcates that the constitution of the atmosphere alone is not sufficient to produce disease without a pecu-

COMM. liar disposition of the body to admit it; for that, otherwise, all without exception would be seized with the prevailing epidemic. This leads him to give directions to correct the intemperament of the body when it is such as disposes it to be readily affected by the constitution of the atmosphere. His directions are similar to those of our author. Besides the causes of epidemical diseases which we have mentioned, he states that unwholesome food and drink may sometimes, though rarely, give rise to them. Of this he relates a striking instance. (De Rebus boni et mali Succi, c. i.) He remarks that the most common epidemical diseases are pestilential fevers. We shall have occasion to state his opinion of them in the next Section.

Of the Greek authors posterior to Galen, Oribasius and Aëtius give the same account of epidemical diseases as our author; and the others either do not treat of them at all, or class them with the subject of our next Section.

Avenzoar has given us an elaborate treatise on epidemical complaints. (iii.) The first cause of them which he mentions is a humid and warm state of the atmosphere, such as that to which Hippocrates ascribed the pestilence which afflicted Thasus in his time. (Epid. iii.) The other causes enumerated by him are the effluvia from dead bodies, stagnant air, the miasmata from stagnant and corrupted waters, and unwholesome food. (iii, 3, 1.)

On the origin of epidemical diseases, especially the pestilence, see, in particular, Haly Abbas (Theor. v, 11.) The principal causes of the change of the atmosphere to a pestilential state, according to Haly, are the nature of the country and the season of the year. The former cause operates owing to the putrid effluvia arising from corrupted fruit, pot-herbs, &c., or the miasmata from marshes, cloacæ, or dead bodies, whether of men or cattle. It was from such causes, he remarks, that the plague of Athens derived its origin. The nature of the season, as it produces diseases in the vegetable, so does it also in the animal creation. As epidemical complaints, he mentions ephemerals, cynanche, small-pox, acute fevers, and other fatal diseases.

Avicenna's account of the origin of pestilential and epidemic diseases is taken almost entirely from Galen; he therefore enumerates as causes of them, a humid and warm state of the

atmosphere, the stagnant air of caverns, the miasmata of lakes and marshes, and the effluvia from dead bodies. (iv, i, 4.) Alsaharavius enumerates exactly the same causes. (32.) Rhases' account is mostly taken from Hippocrates and Galen. (Contin. xxx.)

The historian Ammianus Marcellinus gives an ingenious disquisition on the origin of these diseases; but the distinction which he endeavours to establish in the following passage is not acknowledged by the medical authors in general: "Prima species luis *Pandemus* appellatur, quæ efficit in aridioribus locis agentes caloribus crebris interpellari; secunda, *Epidemus* quæ tempore ingruens acies hebetat luminum, et concitat periculosos humores; tertia, *Lœmodes,* quæ itidem temporaria est, sed volucri velocitate letabilis." (xix, 4.) The causes of these complaints, as enumerated by him, are excessive heat, cold, drought, or moisture, effluvia from putrid bodies, and exhalations from the earth.

According to Diodorus Siculus, the causes which gave rise to the pestilential epidemic which attacked the Carthaginian army in Sicily were the marshy nature of the country in which they were encamped, the bodies of the dead lying unburied, and the excessive heat of the season. (xiv.) He ascribes the plague of Athens to similar causes. (xii. 58.)

SECT. XXXVI.—ON THE PLAGUE, FROM THE WORKS OF RUFFUS.

In the plague there is everything which is dreadful, and nothing of this kind is wanting as in other diseases. For there are delirium, vomitings of bile, distension of the hypochondrium, pains, much sweatings, cold of the extremities, bilious diarrhœas, which are thin and flatulent; the urine watery, thin, bilious, black, having bad sediments, and the substances floating on it most unfavorable; trickling of blood from the nose, heat in the chest, tongue parched, thirst, restlessness, insomnolency, strong convulsions, and many other things which are unfavorable. Should a person foresee that the plague is coming, by attending to the badness of the season, and the unhealthy occupations of the inhabitants, and from observing other animals perishing; when one observes these things, let

him also observe this—what is the character of the present season, and what that of the whole year, for you will be able thereby to find out the best regimen; such, for example, as if the temperature of the season ought to have been dry, but has become humid; in that case, it will be necessary, by a drying diet, to consume the superabundant moisture. Care also must be had of the belly, and when there is phlegm in the stomach it must be evacuated by emetics. And when a fulness of blood prevails, a vein should be opened. Purgings also by urine, and otherwise by the whole body, are proper. But, if the patient is affected with ardent fever, and has a fiery heat about the breast, it will not be improper to apply cold things to the breast, and to give cold drink, not in small quantities, for it only makes the flame burn more; but in full draughts, so as to extinguish it. But if an ardent fever prevails within, and the extremities are cold, and the skin cold, the hypochondrium distended, and the stomach sends the matters which have been melted, some upwards, and others downwards; if watchfulness, delirium, and roughness of the tongue, are present; in these cases, calefacient remedies are wanted to diffuse the heat all over the body, and every other means ought to be tried, in order to determine the heat from the internal to the external parts. The following propoma may be used: of aloes, two parts; of ammoniac perfume, two parts; of myrrh, one part; pound these in fragrant wine, and give every day to the quantity of half a cyathus (℥v.) I never knew a person, says Ruffus, who did not recover from the plague after this draught. So says Ruffus: but Galen says, concerning pestilential putrefactions, that to drink Armenian bole, and, in like manner, the theriac from vipers, is of great service; and that, in the plague which prevailed in Rome, all died who were not benefited by either of these things.

COMM. COMMENTARY. By the plague, as Galen explains in his 'Commentary on Hippocrates,' is to be understood an epidemical fever of a fatal nature. Hippocrates has related several histories of diseases which came under this description in his 'Epidemics,' but they present such variety of symptoms, that we cannot undertake to give their general characters. It is deserving of remark, however, that he several times makes men-

tion of fevers accompanied with buboes. (Aphor. iv. 54, Epidem. &c.) According to M. Littré, buboes are noticed among the symptoms of plague by Ruffus, and also by Dioscorides and Posidonius in an extract given in the following publication: 'Classicorum auctorum e Vaticanis codicibus editorum,' tomus iv, curante Angelo Maio, p. 11, Romæ, 1834. See Littré's Hippocrates (ii, p. 585.) Aretæus mentions incidentally that pestilential buboes are connected with the liver. (Morb. acut. ii, 3.) Under Sect. xvi will be found several passages from ancient authors, in which pestilential buboes are incidentally mentioned. It must be admitted they are very insufficient materials for illustrating the ancient history of the glandular plague, and it may justly excite surprise that the historian Procopius, in the sixth century, A. C., should be the first writer who has given a complete description of this disease. At the same time we cannot agree with M. Nauman, M. Pariset, and other late writers on the plague, who maintain that the epidemic which devastated the world in the reign of Justinian was a new disease. The frequent mention of pestilential buboes by previous authors, although vague, is sufficient to mark the existence of the disease. In this light, at all events, they are viewed by the commentators on Hippocrates, who lived after the glandular plague was properly described. (See Pallad. Comment. in Hippoc. Ep. t. ii, p. 47, ed. Dietz.)

We shall now begin our exposition of the ancient opinions regarding the plague, with a brief notice of the celebrated description of it given by Thucydides, the Greek historian. The more prominent symptoms mentioned by him are the following: Strong heat of the head; redness and inflammation of the eyes; the mouth and internal fauces turgid with blood; breath fetid; sneezing, hoarseness, and afterwards violent cough; vomiting of bile, retching, and convulsions; the heat of skin not much increased, but the internal parts glowing with heat; the skin reddish, or livid, and covered with minute phlyctænæ and ulcers; despondency, restlessness, and intense thirst; and, towards the conclusion, diarrhœa, ulceration of the bowels, and various symptoms of putrefaction. Those who survived the febrile attack were subject to blindness, fatuity, and mortification of the testicles and extremities. The disease generally proved fatal on the ninth or seventh day. The historian affirms

AM. that the plague never attacked the same person more than once. This opinion, by the way, has been advocated in modern times by Massarius, Diomedes Amicus, Heurnius, and Sir William Pym, but general experience seems to be against it. Evagrius relates of the plague which prevailed in the reign of Justinian, that many persons who recovered from the first attack sunk under a second. Ficinus, Montisianus, Joubertus, and many late authorities, hold this opinion. He mentions that the disease was supposed to originate in Ethiopia, and from thence to spread to Egypt, Lybia, and the Persian empire; that in Athens it made its first appearance in the Piræus, where it was at first suspected that the Peloponnesians had poisoned the wells. He says the previous summer was remarkably healthy. Thucydides' celebrated description of the plague is given in a poetical form by Lucretius (de Rerum Natura, *apud finem*), and by Ovid (Metamorphoseon, vii, 528.) Sophocles, the tragedian, appears also to have had the same plague in view. (Œdip. Tyran. *ap. initium.*) The Latin poet Silius Italicus evidently copies his images from it. (xiv.) See also Lucanus (Pharsal. vi), and Manilius (Astronom. i.)

Our next great authority on this subject is Celsus. In his account of the plague, we have to regret, however, that, although he dwells rather minutely on the prophylaxis and treatment, he has omitted to give us a description of the disease; and it is not easy to perceive the principles upon which some of his directions as to the prophylaxis and treatment are given. He recommends a journey to a distant place, or a sea voyage; when this cannot be accomplished, gestation and gentle exercise in the open air, but he forbids all excess. He also forbids early rising, exercise with naked feet after a meal or the bath, also emetics, laxatives, and sudorifics. He directs people to drink, by turns, first water and then wine. (i, 10.) With regard to the treatment, he disapproves, in general, of abstinence and purgative medicines, recommends bleeding, if the strength permit, more especially if the fever be attended with pain; but, if venesection cannot be practised, he directs emetics to be given. At an earlier period than in ordinary fevers the patient is to be put into the bath, and is afterwards to get hot undiluted wine, and everything of a glutinous nature, and flesh of this description. In the case of young persons, he directs these remedies to be administered with great caution. (iii, 7.)

The historian Appian, Lucian, Pliny, and Plutarch, mention wine as an antidote to the plague. Livy and other ancient writers say that the plague is sometimes occasioned by excessive cold. (Histor. v.) COMM.

It is greatly to be regretted that Galen has given us no description of the dreadful plague which prevailed in his time. It appears that he fled from Rome for fear of infection. He alludes to it, indeed, in several parts of his works, but in very brief terms, only mentioning that it put on the appearance of dysentery; and in one place he strongly commends the celebrated theriac as a most efficacious remedy for the prevention and cure of pestilential disorders; and elsewhere he speaks favorably of the Armenian bole. Of the writers on medicine posterior to him, Oribasius and Aëtius, like our author, give no further information on this important subject than what is contained in the brief extract from the works of Ruffus; and the others, with the exception of Nonnus and Psellus, do not treat of the disease at all, unless in an incidental manner. Nonnus, after briefly stating the causes of the plague, proceeds to lay down the principles for conducting the treatment. He recommends clysters, and, if the stomach be loaded with phlegm, emetics: if there be a fulness of blood, he approves of venesection; and also speaks well of giving diuretics. When symptoms of ardent fever are present, he directs cold drink to be given freely, in order to extinguish the febrile heat. He also recommends apomel, the water of ptisan with the seed of bastard saffron, or Armenian bole, or lapis lazuli. Psellus merely mentions, in very general terms, a few of the common symptoms of the plague. (Opus Medicum.) Actuarius, treating of anthrax, mentions that it sometimes take place in epidemical affections. (Meth. Med. ii, 36.)

Before proceeding to the Arabian authorities, we shall give a brief abstract of Procopius' description of the dreadful plague which desolated the Roman empire in the reign of Justinian. Its usual precursors were certain delirious fantasies and disturbed dreams, after which the fever made its attack suddenly. The early symptoms, however, were not well marked, for there was neither increased heat nor discoloration of the skin, nor did the patient apprehend danger. Generally on the first or second day, but in a few instances somewhat later, buboes appeared

COMM. not only in the groin, but also in the armpits and below the ears. Some were affected with deep coma, and others with wild delirium. Some died from sphacelus of the buboes, which, when inspected by the physicians after death, presented the appearance of a *coal* or *carbuncle* (anthrax). Some died at the commencement, and others after the lapse of several days. In certain cases the skin was covered over with black phlyctænæ of the size of a lentil, which were usually succeeded by sudden death. Others were unexpectedly cut off by a discharge of blood. To women in the puerperal state it proved particularly fatal. When the buboes came to a proper suppuration, they generally proved a favorable crisis; but when they did not suppurate, they were commonly followed by a wasting of the thigh. One of the common consequences of the fever was an affection of the organs of speech. All the usual prognostics proved fallacious, and the effects of the common remedies were uncertain. In some cases the bath proved beneficial, and in others it had a contrary effect. At one time the amount of deaths in Constantinople ranged from five to ten thousand each day. (De Bello Pers. 22, 23.) This pestilence is described likewise by Agathias (v), and by Evagrius (Hist. Eccles. iv, 29.) It resembled the plague of Avignon, described by Guy of Cauliac.

The symptoms of the plague, as enumerated by Avicenna, are as follows: Heat, and strong inflammation within, but which are not perceived outwardly; respiration large, fetid, and frequent; intense thirst, dryness of the tongue, with nausea and loss of appetite, such as, if not contended against, will prove fatal; enlarged spleen, great anxiety and restlessness, dry cough, prostration of the powers approaching to syncope; delirium, retraction of the hypochondria, insomnolency, with tepid heat of the body. Sometimes there are yellow, whitish, or red eruptions on the skin, which are of short continuance; or else aphthæ and ulcers in the mouth. The pulse is generally frequent, small, and becomes stronger towards night. Occasionally there are dropsical swellings. The discharges from the bowels are bilious, mixed, fetid, unnatural, and sometimes contain black bile; at other times they are frothy and fetid, or unctuous, being produced by melting of the fat. The urine is watery, bilious, and melancholic. There is sometimes vomiting of black,

but more frequently of yellow bile. There are often fetid sweats. The disease usually terminates with syncope, coldness of the extremities, lethargy, spasms, and convulsions. Some of the most fatal varieties of the plague are not marked by any striking symptoms, neither the heat, pulse, nor urine being much affected. Fetid breath, as indicating putrefaction about the heart, is a most mortal symptom. The treatment must commence with venesection, if there be a plethora of blood, or with purging, if the body be loaded with other humours. The apartments of the sick are to be cooled, and the air of them corrected: they are to be cooled by cold odoriferous fruits, camphor, rose-water, or, if possible, by introducing a stream of water into them. The fetid air may be corrected by fumigations with camphor, myrtles, quinces, ebony, &c.; by sprinkling the apartments with vinegar and assafœtida, and correcting the putridity with lignum aloes, frankincense, musk, storax, *sandarach*, mastich, juniper, bays, and the like. (It may be proper to mention that arsenical fumigations are approved of by Muratori, Lind, and Russel, but condemned by Mead.) As a preservative from the plague, he recommends, in particular, exercise and restricted diet. Haly evidently copies his description. (Theor. v, 11.) Comm.

Rhases agrees with Hippocrates in stating, that pestilential fevers are distinguished by great heat internally, while the surface of the body is cool. The symptoms, as detailed by him, are vomiting and diarrhœa, pain and distension of the belly, coldness of the extremities, urine showing a tendency to putrefaction, discharge of blood from the nose, heat about the breast, singultus tendinum, blackness of the tongue, bulimia, &c. He particularly states that a black discharge from the bowels is a most fatal symptom. Like Avicenna, he gives directions to perform fumigations with camphor, musk, myrrh, bdellium, frankincense, and the like. He mentions that, during the prevalence of a certain pestilence, it was found that hunters escaped the contagion. Like Avicenna, he approves of bloodletting. See Continens (xxx.) He also recommends cold drink and the cold bath. Calefacients and wine, unless diluted with much cold water, he disapproves of. He, like the other Arabian authorities, joins Galen in speaking favorably of Armenian bole and the theriac. (Ad Mansor. iv, 25.)

COMM. The belief that the plague is preceded by extraordinary phenomena in the earth and sky is very ancient. Thucydides concludes his brief account of the last attack of the plague on Athens with the remark, that at that time there were many earthquakes at Athens and other places. (iii, 87.) Manilius says such plagues as that of Athens are commonly prognosticated by comets and other celestial fires. Diodorus Siculus mentions that the Athenian plague was preceded by earthquakes of extraordinary severity. (xii, 59.)

While explaining the symptoms and treatment of the plague, as detailed in the works of the ancient authors, we have purposely omitted to notice its contagious nature, as we wished to give one connected view of the ancient opinions regarding CONTAGION. Before entering upon this disquisition, we think it proper to acknowledge the assistance which we have derived from the writings of Fracastorius, Paulinus, Mead, Marx, Omodei, and Winterbottom, leaving it to the reader to determine, after comparing our humble attempt with their learned labours, whether or not our industry and research have contributed in anywise to throw additional light upon this important subject.

The earlier ancient authors appear to have entertained no suspicions of contagion as a cause of febrile or of other complaints. Homer, as formerly stated, evidently refers the origin of the plague which prevailed in the Grecian army during the siege of Troy to the heat of the sun. The works of the fathers of History and of Medicine have likewise been ransacked in vain, for any traces of the doctrine of contagion. Thucydides, therefore, appears to be the first author (if we except the Mosaic description of leprosy) who makes any positive allusion to the contagious nature of diseases. From his description of the plague of Athens, there can be no doubt that he wishes it to be understood, that the disease was transmitted from one person to another; for he mentions that physicians were more attacked by it than any others, as having most intercourse with the sick; and he afterwards describes the terror which the citizens felt to approach those labouring under the disease, and intimates that it was often contracted by such intercourse. The language of Lucretius, who copies his description, and gives it a poetical form, is still more precise:—

" ———————— nullo cessabant tempore apisci
Ex aliis alios avidi contagia morbi." COMM.
(L. 1235.)

And afterwards,

" Qui fuerant autem præsto contagibus ibant."
(L. 1241.)

Ovid, in like manner, says of the dead bodies:

" Afflatuque nocent et agunt contagia latè."
(Metam. v, 551.)

And so also, Silius Italicus:

" Et posuere avidæ mortis contagia pestes."
(Lib. xiv.)

The historians we must dismiss in a few words, with stating that allusions to the infectious nature of certain diseases are to be met with in Livy, Dionysius the Halicarnassian, Diodorus Siculus, Appian, Plutarch, Quintus Curtius, Dio Cassius, Eusebius, Gregory of Nyssa, and Evagrius. Procopius was a non-contagionist.

The philosopher Aristotle, in one of his problems, makes it a question why the plague is the only disease which infects those who approach the sick. (Probl. i.) There is a curious passage in the works of the orator Isocrates, which shows that consumption was reckoned contagious in his days. (Æginet.) The elder Pliny mentions the contagion of the pestilence. (Hist. Nat. xxxiii, 80.)

Virgil mentions the infectious nature of certain diseases of cattle. (Ecl. i, Georg. iii, 464.) The ancient writers on veterinary surgery and agriculture in like manner state that the plague and scabies of cattle are infectious. See Columella (vi, 5); Vegetius (Mulomed. iii, 23.)

The philosopher Marcus Antoninus alludes to the plague as being contagious. (ix, 2.) Chrysostom does the same. (In Joan. Orat. lvii.) The language of Seneca is very precise: " Itaque ut in pestilentiâ cavendum est ne corruptis jam corporibus et morbo flagrantibus assideamus, quia pericula trahemus, afflatuque ipso laborabimus." (De Tranquil. vii.) To these we may join Isidorus Hispalensis, a much later writer: " Pestilentia est contagium quod quum unum apprehenderit celeriter ad plures

COMM. transit." And, in another place: "Pestilentia est morbus latè vagans et contagio suo quæ contigerit interimens." Alexander Aphrodisiensis intimates that pestilential fevers are contagious, but common fevers not so. (Probl. ii, 42.)

Aretæus appears to be the first medical author who alludes to contagion in unequivocal terms. He says of elephantiasis, that it is as infectious as the plague, being communicated by respiration. Cælius Aurelianus, who was probably nearly contemporary with him, mentions as contagious diseases the plague, incubus, hydrophobia, and elephantiasis. Galen expresses his sentiments on the contagious nature of certain diseases in the following terms: "That a pestilential state of the atmosphere produces fever, is unknown to no one possessed of good understanding; and, also, that it is dangerous to associate with persons having the plague, for there is a risk of catching it, like the itch and ophthalmy. It is dangerous also to live with those labouring under consumption, and, in a word, with all those having a putrid respiration of such a nature as to render the houses in which they lie fetid." (De Diff. Febr. i, 3.) Aëtius (xiii, 120) and our author (iv, i) state their decided opinion of the infectious nature of the plague and elephantiasis. Oribasius, Alexander, Synesius, Palladius, Actuarius, and all the Latin medical authors, with the exception of Cælius Aurelianus, have omitted to make any allusion to the contagious nature of diseases.

Of the Arabians, Rhases mentions, as diseases "which are transmitted from one person to another," lepra (elephantiasis?), itch, consumption, and pestilential fever. These, he says, prove infectious, when one is shut up in a narrow house along with those labouring under them, or when one sits in the wind blowing from them. He states afterwards that ophthalmy and malignant pustules are sometimes contagious. (Ad Mansor. iv, 24; see also Contin. xxxiii, 5.) By malignant pustules he means the smallpox. Avicenna and Haly Abbas give the same list of contagious diseases. Avicenna says that smallpox and measles are of all diseases the most contagious. Of the other Arabians, Avenzoar alone, while treating of elephantiasis, alludes to the doctrine of contagion.

Having now done with the ancient authorities, we shall only give further the declaration of the celebrated Boccacio regard-

ing the plague of Florence: "E fu questa pestilenza di maggior forza, percio che essa dagl' infermi di quella per lo communicare insieme s'avventava a' sani non altramenti che faccia il fuoco alle cose secche o unte, quando molto gli sono avvicinate." (Decameron, Introduzione.) COMM.

The result of our investigations into the opinions of the ancients on this subject leads us to the conclusion, that all, or at least the most intelligent of the medical authorities, held that the plague is communicated, not by any specific virus, but in consequence of the atmosphere around the sick being contaminated with putrid effluvia. Hence, they maintained that mild fevers (συνηθεῖς) which show no tendency to putrescency are not communicable from one person to another. See Alexander Aphrodisiensis, (*l. c.*) Fracastorius, in like manner, considered putrefaction as the source of all contagion. (De Contag. i); and nearly the same opinion was maintained by the learned Fernel, Franciscus de Pedemont, Ingrassius, Ficinus, and others. (See Prælect. Mar. 77.) Although Galen several times speaks of a poison being formed in the human body, he means that the animal fluids are so altered as to become deleterious, and does not hold that there is any specific virus transmitted from one person to another. (De Loc. Affect. v, 7, vi, 5; Epidem. iii.

We may take this opportunity of stating that, after a pretty extensive investigation into the histories of pestilential epidemics, we have come to the conclusion that the plague has almost invariably assumed one or other of the following phases: 1st. That of cholera and dysentery. The plague described by Thucydides, and that of Ingrassias, and many other pestilential epidemics described in ancient and modern times, including the Asiatic cholera of the present age, belong to this class. 2d. That of profuse; and, as they have been termed, syncoptic sweats. The celebrated epidemic of the fifteenth century, now so admirably illustrated by M. Hecker, is the best marked instance which we possess of this form of the disease. M. Hecker, indeed, supposes that the Cardiac disease of the ancients was of a similar nature to the sweating sickness. But it strikes us (although we must admit that we have not had time to consider this point maturely), that the syncoptic fever or cardiac disease of the ancients, was not of a pestilential nature. 3d. The other

Comm. form is the Glandular plague, which many late authorities would consider as the only form of the disease; but as we think erroneously, since the other types are often mixed up with this in the same epidemic. Thus in the plague of Aleppo, during the years 1760, 1761, and 1762, although the ordinary form of the disease was the glandular, a considerable proportion of the cases assumed the first form which we have noticed. And in the plague of Athens, although it commonly put on the appearance of the first form, it would appear probable, from the obscure allusion to cutaneous eruptions in the description of Thucydides, that a certain proportion of the cases were of the second type. The three forms then would appear to us to be as closely allied to one another as diphtherite, ulcerous sore-throat, and scarlatina are; that is to say, that they are all varieties of one species of disease.

SECT. XXXVII.—ON THE TREATMENT OF THOSE WHO ARE SEIZED WITH SYNCOPE FROM CRUDE HUMOURS.

Some are seized with fever while having a great collection of crude humours, and while the mouth of the stomach is at the same time disordered. In them the hypochondrium is distended with flatulence, the orifice of the stomach is more swelled than natural; in some the complexion is turned to a more white and watery, and in others to a blacker. None of these can bear the abstraction of blood without the most imminent danger; but they require evacuation, although they cannot endure phlebotomy nor purging, for even without them they are disposed to fall suddenly into a state of syncope. They are to be cured, then, by friction. It will be proper, at the commencement of the disease, to begin with rubbing the limbs from above, downwards, with moderately rough linen cloths, and afterwards, the whole arms from above, downwards. But when the limbs have been sufficiently warmed, and there is danger of a sense of lassitude, we must use a relaxing oil, and avoid all astringents. When it is winter, we must also use a sudorific one, such as the Sicyonian oil, or that of chamomile. After rubbing the limbs freely, we must next rub off the oil, and proceed to the spine, which we must rub in like manner, and then immediately return to the legs, and from them to the

arms again, and afterwards to the spine again, continuing this practice for a whole day. Honied water, in which hyssop has been boiled, is most beneficial in these cases. And they must neither get farinaceous food, nor soup, nor water, nor be permitted at all to drink freely; but they ought to be contented with honied water alone for the first three days, and be rubbed in succession. If the strength be moderately good, and the contents of the stomach do not pass properly downwards, you may venture with a clyster. But if there is a greater overflow of the superfluities than proper upon the stomach, you must first boil the honied water well, for thus it will be less laxative; but when the belly is looser than proper, you must not thus stop it, but, instead of the honied water, give the juice of ptisan. But if the discharge still continue, we must support with a gruel made from chondrus. But if we ascertain from the weakness of the pulse that the powers of the system are prostrated, it will be proper to give bread out of diluted wine, provided there be no inflammation of the stomach or liver. But should they be inflamed at the same time that the body is loaded with crude humours, the state of the patient is hopeless. If you perceive that the humours are thick, give oxymel always instead of honied water; if it is summer, the patient hot, and fond of cold drink, give him cold oxymel; but when in winter, it must be hot. Baths are most prejudicial to such persons. If, when you are called, syncope has already come on, and the parts which I have mentioned are free from inflammation, give a small bit of bread out of wine, and proceed straightway to the friction in the manner I have described. In those cases in which the syncope is occasioned by yellow bile infesting the mouth of the stomach, we must give cold drink, and administer wine that is thin, of a bright yellow colour, and old.

COMMENTARY. This Section is taken either from Oribasius (Synops. vi, 27), or Aëtius (v, 97.) These authors, however, merely abridge the account of this subject which is given by Galen. (Meth. Med. xii, 5, and Therap. ad Glauc. i.) Syncope, according to the explanation of Galen, is a sudden prostration of the vital powers, without suspension of the respiration, as in *deliquium animi*. Our author has given a very correct account COMM.

COMM. of Galen's treatment. He states that, the system labouring under a load, the great indication is evacuation, but that venesection cannot be borne in such cases. In short, he insists that our great dependence must be placed on friction, for the application of which he gives very minute directions. When the pulse suddenly sinks and becomes irregular, he administers wine, unless there be inflammation of the stomach or liver. In cases complicated with crude humours, he pronounces the bath to be most prejudicial, and also disapproves of very cold or very warm air. He is most particular in his directions for the selection of the most proper wine to be used, and gives some interesting observations on the principal Greek and Roman wines used in his time. He concludes his remarks with stating that thick wines ought to be avoided as injurious, and such as are watery and thin as ineffectual, whereas those of a middling kind are to be selected. He particularly praises the Ariusian and the Lesbian. The Falernian he condemns, as being too fragrant and austere, which qualities render it injurious to the head.

Alexander disagrees with Galen as to several of the points of treatment laid down by him. He insists that Galen's rigid rules for applying strong friction, at the same time that abstinence is enjoined, are such as no ordinary powers of constitution could bear up under; and, therefore, he recommends to rub first, and then to give some light nourishment, such as thin ptisan, oxymel, and bread soaked in wine, when the strength is greatly overpowered. Nay, when the powers of the constitution are in danger of sinking under the weight of the load, he suggests the propriety of having recourse to venesection; and accounts for the benefit derived from this evacuation upon the same principle that a fire which is like to be extinguished by an excessive load of green fuel burns brighter when part is taken off. This is an ingenious explanation of the manner in which bleeding proves useful in cases of congestive fevers. Respecting the use of wine and the bath, his views are similar to those of Galen. He approves very much of administering a light-coloured diffusible wine when the powers of the system are much sunk.

Avicenna adheres closely to the principles of treatment laid down by Galen; and, therefore, says nothing of venesection. (iv, 1, 2, 58.) Rhases treats this complication of fever in like manner. He calls it "Febris syncoptica, ex humorum copiâ et

cruditate nata." (Ad Mansor. x, 14.) He mentions emetics, but approves most particularly of friction. (Contin. xxx.) Comm.

Averrhoes contends that, in such a case, it is lawful for a Mussulman to drink wine, although forbidden by the Prophet. He approves also of friction. (Collig. vii, 16.)

Prosper Alpinus informs us that the Methodists, in such cases, gave wine and aromatics, and used every means to rouse the system. (Med. Method. vi, 9.)

SECT. XXXVIII.—OF THOSE WHO HAVE FALLEN INTO SYNCOPE FROM THIN HUMOURS.

Those who have fallen into a state of syncope from thin humours, must be treated quite oppositely to the manner described, for you will find the diagnostic symptoms quite different. They must be supported by taking a little food frequently. And their case is to be thought hopeless when the liver or stomach is inflamed at the same time that the powers are gone. In these affections, the expression of the countenance speedily becomes death-like. It is necessary to support their strength with food, but their skin must be condensed instead of being rarefied as in the former case. The air must be cooled, and they must be rubbed with astringent ointments. They must be furnished with food not very laxative, also bread and gruels from chondrus, with autumnal fruits that are austere, and not apt to spoil; these, either by themselves or with bread. A watery wine taken from the beginning with the food will be beneficial.

Commentary. This is taken from Galen. (Meth. Med. xii, 6.) See also Oribasius (Synops. vi, 27); Aëtius (v, 98.) In this case Alexander recommends nearly the same plan of treatment as Galen. He recommends for food things which are incrassant and anti-discutient, such as the juice of halica, succory, lettuces, apples, pomegranates, pears, &c. They must be administered, however, in small quantities. He approves of giving a weak watery wine, not very old. He recommends friction with tonic and incrassant oils, such as the oil of apples, and other applications of a like nature. Comm.

COMM. Avicenna, Averrhoes, and Rhases treat the case exactly as our author.

SECT. XXXIX.—ON THE OTHER CAUSES WHICH OCCASION SYNCOPE.

There are four other causes from which men fall into syncope; namely, violent pain, watchfulness, too great evacuation, and sometimes motion when in a state of delirium. To these, if you please, you may add a fifth, namely, an intemperament of the primary organs. Death takes place most quickly when the heart is affected, next, when the brain, but not so when the liver.

COMM. COMMENTARY. See, in like manner, Galen (Meth. Med. xii, 7); Oribasius (Synops. vi, 28); Aëtius (v, 99.)

From the Commentaries on the last three Sections it will be seen that Galen and his followers, whether Greek or Arabian, consider syncope in the light of a symptom or complication of fever. But it is treated of as a distinct disease by Celsus, Cælius Aurelianus, and Aretæus; by the former two under the name of *morbus cardiacus*, and by the last under that of *syncope*. We think ourselves called upon in this place to give a brief exposition of their views.

Celsus treats of *morbus cardiacus* after phrenitis, because, as he says, persons affected with phrenitis are apt to fall into the other. He calls it a great weakness of the body, which, owing to the languid state of the stomach, is melted by immoderate sweating. It is recognized by a small and weak pulse, immoderate sweats, breaking out from the chest and neck, the feet and legs alone being dry and cold. He adds, it is a sort of acute disease. His treatment consists in applying a repressing cataplasm to the præcordia, and next, in stopping the sweats by friction with sour oil, roses, &c., or with some cerate similarly prepared. If the sweating gains ground, the body is to be anointed with parget, litharge, Cimolian earth, or sprinkled with the powder of them. The patient is to be lightly covered, laid in a place not too warm, with open windows, so that a cur-

rent of air may reach him. Light food is to be frequently administered, and also, if necessary, wine neither too strong nor too weak, which may be given with barley-meal, if the patient has not taken other food. If he cannot take food, he is to be first treated with the affusion of cold water; and if his stomach have lost its tone, he is to be allowed to vomit before taking food. If the stomach still reject the food, he is first to take a cupful of wine, which is to be repeated after an hour, and then the whole body is to be anointed with pounded bulbi (onions?), which will have the effect of making the stomach retain the wine, and thereby heat will be restored to the whole body and strength to the veins. As a last resource, he recommends an injection of ptisan or gruel. Fragrant things may also be applied to the nose, such as roses and wine; and if the extremities be cold, they are to be chafed with hot hands smeared with oil. If the violence of the sweating be thus checked, and life prolonged, the time thus gained will be of some assistance. Means are afterwards to be taken to prevent a relapse. (iii, 19.) COMM.

Cælius, the Methodist, treats so fully of the *cardiac passion*, that we feel at a loss how to give a competent outline of it within our limits. The followers of Asclepiades, he says, held it to be a swelling about the heart, connected with congestion; but, according to Soranus, the great master of the Methodists, the heart is not primarily affected; and he holds it to be an acute and sudden prostration, by which the distribution of particles over the passages of the body is stopped. The causes of it are many; such as protracted indigestion, intoxication, baths after food, vomiting after supper, and depressing passions, by which the body is dissolved into sweats. It takes place most frequently, he says, in continual, ardent, and inflammatory fevers on the sixth day. His description is too lengthy to find a place here. Suffice it to say that when the affection is at its height, the pulse is small, tremulous, and creeping; there is a profuse, viscid, and fœtid sweat over the chest, face, and perhaps the whole body, with failing respiration, pallid countenance, hollow eyes, and so forth. Some of the preceding authorities, such as Asclepiades and Themison, held that it was generally, but not always attended with fever; and with them he pretty nearly agrees. As we have already hinted, he is not disposed to admit that it is a primary affection of the heart, but rather

COMM. holds it to be a disorder of the general system. Having discussed, in two chapters, the diagnosis, first, between it and affection of the stomach, and then between it and critical sweats, he comes to the treatment. The patient is to be laid in a cool and well-ventilated apartment, to be covered over with light clothes, and to have his face, neck, and chest sponged with cold water and vinegar; and if the sweating continue, astringents and obstruents, such as alum and Samian earth, are to be added; or the body may be anointed with astringent oils; but, in particular, various applications of a fragrant and astringent nature are to be made to the chest. He recommends great caution in the administration of food and drink; directs that the mouth should be rinsed with something cooling; and, in process of time, that various articles of a restorative nature should be given for food, and at last, wine, about the choice of which he is very scrupulous, approving, in general terms, of such as is white, well clarified, and subaustere, and in particular of the Surrentine, the Falernian, the Chian, and the Lesbian. He cautions, however, not to give too much at a time. When there is great prostration of the vital powers, he approves of ligatures to the extremities, and the application of cupping instruments, with great heat to the præcordia. When all other means fail, the patient is to be supported by administering nourishing things in clysters. Such is his own mode of treatment. He afterwards animadverts freely upon the practice of the other sects.

Although Aretæus treats of syncope as a separate disease, he holds that it derives its origin from causus, or ardent fever. He pronounces it to be a loosening of the vital cords, and that its seat is the heart; hence his chapter on the treatment is entitled, on the cure of *cardiacs*. The symptoms, he holds, mark an affection of the heart, namely, small and weak pulse, great palpitation, throbbing of the heart, fainting, unrestrainable sweats, &c.

His treatment is little different from that of Alexander in syncoptic fever. Thus he begins with venesection, unless otherwise contra-indicated, justifying this practice by the pithy remark that the powers of the system may be reduced by suffocation as well as by want. He recommends, however, that blood should be taken in moderation, and that some wine should be given immediately afterwards, unless inflammation be present. Wine, he

remarks, in inflammations, adds to the disease, but, in ordinary cases, to the strength. When general bleeding cannot be borne, he advises cupping in a guarded manner. He approves of bathing the head with cooling things, of cool air, and of all things that are grateful to the senses. When the system is quite sunk, and the extremities cold, he recommends wine guardedly with light soups. The wine, he says, should be fragrant and not very astringent, but should be given with moderation, unless the sweats are very profuse and the skin cold, when he advises wine to be given to any extent, wine in such cases being the last hope of life. He directs further that the patient should be kept up with encouraging words, and the application of fragrant and astringent things, such as alum, rose-water, and the like. He is to be exposed to fragrant and cool air, and, if the sweats persist, obstruent substances, such as Samian earth, &c., are to be added to the applications, and a sponge soaked in cold water is to be applied to the face. Stimulants and rubefacients are to be applied to the extremities. He concludes with remarking that convalescence is often prevented by latent inflammations, which end in marasmus, in which cases the physician must endeavour by gestation, friction, baths, and the administration either of a woman's milk or that of an ass to support the strength. (De Cur. Acut. ii, 3.) COMM.

Aëtius also has a separate chapter on *cardiacs*, although he holds syncope to be symptomatic of acute fever. We need not enter upon an exposition of his views further than to mention that he is of opinion that the part originally affected is the cardiac orifice of the stomach. (ix, 1.)

By *cardiac disease* in fevers the ancients would seem to have meant to describe a febrile affection, attended with congestion and great nausea. Such a variety of remittent fever is described by the late Dr. Robert Jackson as still occurring in warm climates. The symptoms are great nausea, sluggishness, obscure, weak pulse, and deep respiration. He recommends bleeding, and afterwards stimulant applications to the extremities. (On Fever, p. 193.)

Since writing the above we have had an opportunity of consulting Hecker's 'Epidemics of the Middle Ages,' and beg to refer our readers to it (p. 306) for an ingenious disquisition on the cardiac disease.

SECT. XL.—ON PAIN.

A torpid pain is occasioned by a cold affection; a throbbing is characteristic of a strong inflammation. But, if a person feel as if pierced by a sharp-pointed instrument, or bored by a wimble, this kind of pain is peculiar to the thick intestine, i. e. the *colon*. The pungent is seated in the membranes. The darting pain attends the most vehement attacks, not only of hemicrania, but also of cephalæa. It is said to be darting when it commences in the seat of the affection, as from a root, and spreads quickly to the surrounding parts. Stretching pains take place in the nerves, when they are affected and stretched towards both extremities. But the nerves are not liable to be affected with lateral distensions. The membrane under the skin when distended occasions tensive and torpid pains; those between the flesh, as it were, divellent. For they are many, have irregular insertions, and surround the flesh. But the pains proceeding from the membranes which surround the bone, are deep-seated, and seem to proceed from the bones themselves. Wherefore, when no external cause of the pain is apparent, you must consider the patient's preceding regimen. If it has been more inactive than usual, or if he has been taking more nutritive food than common, or if any evacuation has been suppressed,—if any or all of these circumstances be observed, plethora is the cause of the pain, and you must evacuate him as quickly as possible; for, by this means you will be enabled with all safety to use such remedies as are fitted to repel the defluxions from the affected parts. If the part be distended with a fulness of blood, open a large vein near it immediately; but when bad humours alone are the cause, you must purge; and, when both meet together, you must use both evacuations, beginning with the bleeding. If, after both these remedies have been tried, the pain continue, it is clear that the offending matter has become fixed in the part affected; and it is also clear, that the cure will be accomplished by discutient remedies. In like manner, we may cure pains from flatulence, by soothing them with attenuant food and injections, and opening the pores of the containing part with cataplasms, irrigations, and fomentations. If a swelling bearing down and pressing

upon the part be the cause of the pain, it must be removed; but, if it proceed from a pungent humour, attenuant and calefacient things are most improper. Dill boiled in oil is anodyne and soporific, and the green more than the dry.

COMMENTARY. This Section is taken from Oribasius (Synops. vi, 29), or Aëtius (v, 100.) All these authors, however, merely abridge the account given by Galen. (Meth. Med. xii, 8, and de Locis Affect. ii.) In the latter work he gives a most ingenious dissertation on the different kinds of pain, and the states of the body in which they occur; but, as our author has given a summary of his observations, we think it unnecessary to go over the same ground. We shall, therefore, merely notice some of his remarks on the treatment, as delivered in the other work. When the pain is connected with flatulence, it is to be removed by food, drink, cataplasms, and fomentations of an attenuant nature. When pungent humours are the cause of the pain, they are to be treated by evacuants, diluents, or narcotics. When occasioned by thick and viscid humours, he forbids narcotics, the action of which, being frigorific, renders them thicker, and the containing parts more compact. In all such cases, therefore, he holds that opium and hyoscyamus, although they afford a temporary relief from pain, act prejudicially. He also proscribes things of a very hot nature, both internally and externally, and recommends to give attenuants, or things of an incisive nature. He in particular commends garlic, which he calls the theriac of rustics. As to external applications, he directs, in febrile cases, first a dry fomentation of millet-seeds, and, if it is not successful, friction with subtile or attenuant oils, and the fat of fowls. COMM.

Aëtius defines pain to be a sensation produced by a sudden change of temperament, or a solution of continuity. In illustration of the former cause, he remarks that all sudden changes from heat to cold, or *vice versa*, occasion severe pains. To the latter he refers rupture, contusion, and erosion of the parts. Rupture is produced by tension, contusion by weight, and erosion by some pungent quality. These causes of pain ought to be particularly attended to, and the treatment modified accordingly. His subsequent account is exactly the same as our author's.

COMM. The different kinds of pain are fully treated of by Avicenna (i, 2, 3, 20), and by Haly Abbas (Theor. vi, 16.) Averrhoes has delivered the treatment of this complication of fever in nearly the same terms as Galen. When the pain is occasioned by warm air or flatulence, he particularly commends cupping applied with great heat. He agrees with Galen in condemning narcotics, when the exciting cause is of a cold nature. He also joins him in condemning hot fomentations and clysters, when the pain of the bowels is occasioned by a hot humour. (Collig. vii, 18.) See Rhases (Cont. xxxiii.)

SECT. XLI.—ON COLLIQUATIVE DIARRHŒA OR MELTING.

When anything is discharged from the bowels which was not part of the food or drink that was taken, but of the fluids of the body which had flowed to them, (resembling the yellow bile which is continually discharged by vomiting and purging, but differing from it in fetor; and in this, that the alvine discharge is of a darker yellow, of the consistence of the sordes balneorum, oily, and adipose,) the disease is called colliquation or melting. At first the fat and newly-made flesh are dissolved and melted by the heat of the fever; but as the evil is protracted, some of the solid parts themselves are melted down. In this most unfavorable state of fever, a draught of cold water from the coolest fountain is the most proper remedy; likewise cold cataplasms and epithems ought to be applied to the chest and hypochondriac regions, and cooling food to be given.

COMM. COMMENTARY. Galen mentions that a colliquative discharge from the bowels was a common symptom of the fatal plague which prevailed in his time. He adds that the fæces were generally of a deep yellow colour, and always fetid. (Comment. in Hippocrat. Epidem. iii.) In another place, he states that it is a fatal practice to bleed or purge in cases of fever complicated with diarrhœa. (Therap. ad Glauc. i.)

Our author borrows from Oribasius (Synops. vi, 30), or Aëtius (v, 91.)

The Arabians treat febrile melting upon general principles, as explained under the head of Diarrhœa.

On the colliquative diarrhœa in fevers, see, further, Prosper Alpinus (de Præs. Vita et Morte Ægrot. vii, 11), and Fabius Paulinus (Prælect. Marc. p. 343.) COMM.

SECT. XLII.—ON WATCHFULNESS IN FEVERS.

Those who are much troubled with insomnolency, we are to direct to have their legs and hands bound with ligatures at the time when they were accustomed to go to rest; and make them keep their eyelids open, or wink, until they are sufficiently fatigued; then we suddenly loosen the ligatures, remove the lamp, and order complete stillness to be preserved. But, when the insomnolency is obstinate, we must bathe the forehead during the decline of the paroxysm with the decoction of the heads of the black poppy, and direct the patient to snuff up the dried and powdered husk of the white poppy; or from the root of the mandragora pounded with wine and rose oil in equal quantities, we make an emollient ointment (*malagma*), and smear the forehead with it. Or we use, during the paroxysms, wild thyme boiled in must with melilot. Or, taking the pounded heads of poppies, we make a cataplasm of it with bread and rose oil, or cerate. And the greatest attention ought to be paid to the food. Let about three spoonfuls of the seeds of the white poppy be added to the patient's gruels; and let his pot-herbs be prepared by adding to them as many of the leaves of the black poppy, if green, as can be contained within three fingers; or otherwise, three or four dried heads may be boiled with them and taken. If, even by these means, sleep cannot be procured, let him be smeared with the juice of poppy or of mandragora. But the electuary composed from the heads of poppies, and, particularly that which is drunk with sodden wine, to the amount of a spoonful, or a spoonful and a half, often disposes to sleep. Those who are not troubled with fulness of the head may use the following fumigations in the decline: Of Indian leaf, of amomum, of costus, of arnabo, of each ʒ j, of the fruit of the balsam tree lb. j, of storax, of ammoniac perfume, of Scythian bdellium, of the root of the mandragora, and juice of poppy, as much; use as a fumigation with cypress-wood.

COMM. COMMENTARY. We are informed by Celsus that Asclepiades trusted almost entirely to gentle friction in such cases. (iii, 18.)

Our author, as usual, copies freely from Oribasius. (See Synops. vi, 31.) Nearly the same directions are given by Aëtius. (v, 116.) Those in the beginning of the Section are from Galen; the remaining part is from Herodotus and Philumenus.

Nonnus gives a correct account of the established rules of treatment in such cases. Thus, he directs us to use ligatures, and apply friction, to the extremities; and, if this treatment have not the desired effect, to have recourse to soporific decoctions, or liniments prepared with poppies, opium, mandragora, &c., or even to give internally an infusion of poppy heads. (Epitome, 145.)

The directions given by Avicenna are so like our author's that we must suppose them copied from him. He directs us first to try the effect of fatiguing the patient by talking loud to him, placing many candles in his chamber, and applying ligatures to his extremities. When this method does not succeed, he recommends the soporific applications mentioned by our author. When there is nothing to forbid the use of it, he permits the syrup of poppies. (iv, i, 2, 20.) Haly Abbas likewise recommends poppies externally and internally. (Pract. iii, 23.) Averrhoes briefly directs food and applications of a soporific nature. (Collig. vii, 2.) Rhases mentions our author's plan of treatment, and further seems to approve of liniments made of mandrogora, opium, henbane, and the juice of lettuces. (Cont. xxxi.)

Cælius Aurelianus remarks that the indiscreet use of soporifics may bring on lethargy. According to Prosper Alpinus, the Methodists approved of fomentations, consisting of soporific medicines, such as lettuces, opium, and the like. (Med. Meth. vi, 8.)

The earlier of the modern writers on medicine approve of applying to the nose a sponge soaked in a soporific liniment prepared from opium, henbane, mandrake, cicuta, lettuce, and the like. (See Theodoricus, iii, 8.)

SECT. XLIII.—THE CURE OF CATAPHORA OR SOMNOLENCY.

Sponge the forehead with oxycrate of the temperature of new milk; put tight ligatures round the extremities; and apply to the nose strong-smelling things of an incisive quality. In the remissions, apply cupping instruments between the shoulders along the spine. When the disease is protracted, errhines must be tried during the remission. Let the food consist of things having incisive and dividing properties, as recommended by us in our general directions regarding the health.

COMMENTARY. The treatment mentioned by our author is recommended by almost all the other authorities both before and after his time. See, in particular, Oribasius (Synops. vi, 33); Aëtius (v, 117); Nonnus (Epitome, 146); Avicenna (iv, 1, 2, 18); Haly Abbas (Pract. iii, 23.) COMM.

Prosper Alpinus gives an excellent account of the practice of the Methodists. It consisted of painful friction, tight ligatures, rubefacients applied to the extremities or head, sternutatories, and, in short, everything calculated to rouse. (Med. Meth. vi, 7.)

SECT. XLIV.—THE CURE OF HEADACH IN FEVERS.

When headach proves troublesome in fevers, after the accustomed evacuations, in the decline of the paroxyms, the head ought to be anointed, first with the common oil from unripe olives, or with rose oil, to which a very small quantity of vinegar has been added; which, if it be the summer season, and the fever of the ardent type, may be used cold; but, in winter, if the fever be not ardent, it must be hot or tepid. In the oil may be boiled the juice of wild thyme and knot-grass (*polygonum*); and in summer, the heads of the poppy, or the poppy itself may be added, as in winter, a moderate quantity of the hogs-fennel may be substituted in place of it. When the pain continues in the forehead, if the open of the head be bare, a poultice may be applied to it, made of old barley-meal and knot-grass; or, in like manner, of bread and roses, or of some myrtle or wild thyme. Some are rather benefited by an admixture of pennyroyal, and

others, when the affection was of a hot nature, have rather been remedied, by having flea-wort (*psyllium*) added to the barley-flour, or even by this substance alone, when boiled to the consistence of bird-lime. It must be frequently changed. Coriander with barley-meal may be used in like manner. Aloes with vinegar are also to be rubbed in, or myrrh and ammoniac in like manner, and crocomagma. Pulsatory pains are dispelled by rue and mint, with bread, to which a little rose oil has been added. When the pain does not yield to the afore-mentioned remedies, we must first cut the hair close by the skin, and then rub some of the oily embrocations over it all; after which cupping-instruments are to be applied to the hind-head, and the extremities to be bound with ligatures, and chafed. Leeches also are a proper application. But if a catarrh or defluxion raise the pain in the head, we must apply the remedies which will afterwards be described in the proper place. But if exhalations from the stomach have been carried upwards, and hurt the head, we must attend to them, as is stated below.

COMM. COMMENTARY. Part of the directions delivered by Celsus for the treatment of headach deserves to be given in his own language: "Si capitis dolores sunt, rosam cum aceto miscere oportet, et in id ingerere: deinde habere duo pittacia, quæ frontis latitudinem longitudinemque æquent: ex his invicem alterum in aceto et rosâ habere, alterum in fronte: aut intinctam iisdem lanam succidam imponere. Si acetum offendit purâ rosâ uterdum est, si rosa ipsa lædit, oleo acerbo." If this does not succeed, he recommends other more refrigerant applications prepared with iris, poppies, ceruse, litharge, &c. (iii, 10, 112.)

When headach occurs towards the beginning of fever, Galen bleeds once and again, if there be nothing to contra-indicate depletion, and more especially if the patient be plethoric. He then attends whether it arise from fumes proceeding from the stomach, or constipation of the bowels, and corrects these conditions accordingly. If it make its attack after the seventh day, he first evacuates the bowels by clysters, then cups the back part of the head or neck, or uses paregoric applications, such as rose oil, with some vinegar, if in summer; but, if in winter, especially in persons of a cold temperament, the oil of chamomile, with a fifth part of vinegar. See further 'De Med. sec. Locos.' (ii.)

Alexander recommends attention as to whether the headach be connected with the crisis, and in that case he cautions against meddlesome interferences, which may do more harm than good. When any applications are admissible, he recommends that they be of a cooling and soporific nature. (i, 10.) COMM.

Aëtius likewise recommends bleeding, purging, and vomiting, when not contra-indicated; and gives very proper directions about the local applications. He directs us to soak a handful of wool in some cooling fluid, and, holding it above the head, to squeeze out the fluid, so that it may fall upon the head from a height. (v, 100.)

Palladius says that headach in fevers is occasioned by repletion and distension of the veins, owing to fumes arising from the stomach. (De Febribus, 13.) Nonnus merely abridges our author's account. (Epit. 147.)

Avicenna's directions about the local applications are brief, and similar to those of the Greeks. (iv, i, 2, 19.) Haly Abbas recommends bleeding and attention to the state of the stomach, for the relief of which he in certain cases permits the use of wine. (Pract. iii, 20.) Rhases joins preceding authorities in recommending vinegar and rose oil to be poured upon the head. They are to be used cold in summer, but hot if in winter. (Cont. xxx.)

We have seen that Celsus approved of cold and astringent applications to the head. The Methodists condemned this practice, and recommended hot water to be poured upon the open of the head. Hippocrates seems to allude to this practice, when he says: "Much hot water poured upon the head removes fever." (Aphor. vii, 42.) Prosper Alpinus gives an excellent account of the Methodical treatment. (Med. Meth. ii, 6.)

SECT. XLV.—ON THE CURE OF STOMACH AFFECTIONS.

If the stomach be weak, we must apply strengthening cataplasms to it, such as those made of dates and wine, and of barley-meal and saffron, and of mastich and aloes; and use embrocations from wormwood, the oil of apples, and of mastich, nard, and wine; and if hot, we must add cooling things, such as the juices of gourd, lettuce, purslain, nightshade, endive, and unripe

grapes. But if the bowels appear to be inflamed, it will be proper to add to the embrocations some of the relaxing medicines, such as oil of chamomile and of privet, the grease of a cock or goose and bdellium, ammoniac, or the like; and to the cataplasms, the seed of parsley and fenugreek, the flowers of the marshmallows and chamomile; and, in a word, let the application be a compound of relaxing, attenuant, bitter, and astringent properties.

COMM. COMMENTARY. Celsus notices these affections. When there is pain and inflammation about the præcordia, he recommends us to use at first repellent cataplasms, and, when the inflammation abates, to exchange these for hot fomentations, whereby the remains of the complaint will be removed. Pain without inflammation requires no application, as it will be carried off by the fever itself. (iii, 10.)

Galen treats of all sorts of applications for affections of the stomach in his work, 'De Med. sec. Locos' (viii.) Our author follows Aëtius. (v, 95.)

For atony of the stomach, Alexander recommends the applications mentioned by our author. When there is ardor of the stomach, a seasonable draught of cold water, he says, may do much good, whereas, if unseasonably given, it will prove highly dangerous. For atony of the stomach, he also recommends hot wine, if not contra-indicated; and most especially friction of the extremities. When it can be borne, the bath, he says, proves beneficial in cases of atony. When there is a sense of cold, he recommends poppies and wormwood. When the stomach is loaded with offensive humours, he directs an emetic of oil and water to be given. This remedy, he adds, sometimes operates downwards with the best effects, and he directs its purgative operation to be promoted by giving suppositories. He concludes, with recommending the stomach to be strengthened by giving a decoction of wormwood with wine, but forbids this medicine until the fever be abated. (xii, 3.)

Of the Arabian authors, Serapion's account is the fullest, but it is taken almost word for word from Alexander. (vi, 19.) Rhases states that he had often seen bad consequences arise from evacuation having been practised before attending to the stomach. (Contin. xxv.)

SECT. XLVI.—ON INORDINATE CHILLS AND RIGORS IN FEVERS.

When rigors are critical, we must not interfere with them, nor attempt to put an end to the struggle; and a chill succeeding to a sweat will readily pass away and give no trouble. But when the rigor and chills are protracted, and more particularly, if occasioned by a collection of cold phlegm, we are first to apply ligatures round the limbs in various ways, and then anoint them with the oil of chamomile, or of privet, or of iris; or, if a stronger application be required, we may add to the oil some pepper, or the seed of the rosemary, or adarce, or castor, and the whole body is to be gently rubbed with these things. And in order that the oil may not readily run off, a small quantity of wax may be melted with it. Or, if it is the rigor not attended with heat, we must use the most powerful restorative ointments (acopa), and also dropaces and sinapisms. Proper fomentations ought likewise to be got ready. The acrid-scented things are likewise proper, such as calamint, pennyroyal, and hyssop. Before the attack, we should likewise give for drink honied water, in which pepper and rue have been boiled. And we should likewise give of the Cyrenaic juice, to the size of a millet, two hours before the paroxysm, mixing it up with boiled honey; and we are to give the juice of the laserwort in like manner. And the composition for quartans, made from the Cyrenaic juice, has proved beneficial to many. And some, by going into a bath of hot oil, have shaken off obstinate rigors, as Archigenes affirms. But Galen recommends, before the attack, rubbing the skin with southernwood, or dried calamint, or the leaves and flowers of flea-bane (conyza), or with costus, or pellitory, these two last with oil. By these means the rigors will nearly or altogether cease.

COMMENTARY. These febrile symptoms are treated of by Celsus at considerable length. (iii, 11, 12.) He properly recommends fomentations of a hot and dry nature, and friction with calefacient oils. When produced by a bilious defluxion upon the stomach, he gives saltish water so as to operate as an emetic. He makes mention of the bath, and in certain cases allows wine. For Galen's sentiments, see 'de Diff. Febr.' (ii), COMM.

COMM. 'de Causis Sympt.' (ii, 5), 'de Inequali Intemp.,' 'de Tremore, Palp. et Rigore.' The last-mentioned work, in particular, contains some ingenious speculations on the nature of rigors. Our author has mentioned Galen's treatment. Hippocrates pronounces a rigor occurring in continued fever, when the patient is become weak, a mortal symptom. (Aphor.)

Aëtius states that tremors take place in fevers for the most part owing to errors in eating and drinking. Holding them to be connected with disorder of the spinal marrow, he directs us to apply to the back wool soaked in some stimulant oil, or to put the patient into a bath of oil. He recommends castor, both when taken by the mouth and applied externally with the embrocations. (v, 130.)

According to the explanation of Palladius, rigors and tremors are occasioned by fumes or vapours arising in the internal parts, and being diffused over the body. (24.)

The treatment recommended by Haly Abbas is simple and judicious. He directs us to give draughts of hot water, to put the patient's feet into hot water, and to rub the feet, and, if necessary, the other parts of the body, with calefacient oils and the like. (Pract. iii, 20.)

Avicenna gives a very accurate account of the different modes of treatment, but they are much the same as our author's. He approves of ligatures to the extremities, of rubbing them with stimulant oils, or even with liniments prepared with assafœtida and mustard. He says the bath of hot oil is very beneficial. He also recommends draughts of hot water, and potions containing opium, which, he remarks, will procure sleep and perspiration. In certain cases he allows hot wine, which had been recommended by Hippocrates. (Aph. vii, 56.) He directs us to open the bowels with the hiera, or pills of assafœtida. (iv, i, 2.) Rhases particularly commends a draught of hot water. (Cont. xxx.)

SECT. XLVII.—ON SWEATS.

We must allow critical sweats to go on until they produce the necessary evacuation, and assist by means of moderate heat and rest, and by not wiping away the sweat (for one brings on another), by washing the mouth with warm liquids, by warm

drinks, and by sleep. The sweats which occur in the decline of a fever are to be treated like the critical. Sudorific remedies are sufficiently treated of in the 18th section of the First Book. But when the sweats exceed in quantity, they must be wiped off, and the covering of clothes lightened, so as to cool the patient. For, by exceeding, they occasion lassitude, and often bring on syncope. Let, therefore, the covering be light and moistened; let the air be cooled; and let ventilation be used during sleep. Let the black myrtle, pounded, be sprinkled on the body, and gall, and the bark of the pine, in like manner. Let amber and polenta, with astringent wine, be applied to the proper parts; and let the face be sponged with oxycrate. Archigenes uses quicklime and the burned lees of wine in these cases, and for the rigor not succeeded by heat; for both, he says, when heated, become dry. He also orders us to bathe the middle parts of the body with the juice of plantain, or coriander, or purslain, or cabbage, that they may obstruct the passages of the sweat. In sleep, pieces of cloth smeared with Cimolian earth, dissolved in water, are to be applied to the back and chest; and the whole body should be anointed with the oil of roses, or of apples, or of lentisk, or of myrtle, or with the cerates from them. But fatty substances are particularly adapted to them; for, by shutting up the insensible pores, they prevent the passage of the fluid. It is clear that dry food and moderately astringent wines are befitting to them; but much drink should be avoided, and, in particular, all things of a very liquid nature, and likewise frequent washings of the mouth. But, if possible, gestation should be taken in a cold state of the air. The extremities in particular are to be cooled by these means. For those sweats which are extorted by spasms and pains, tight ligatures, or fomentations, are to be applied to the extremities, and they may be relieved by gently rubbing with woollen cloths.

COMMENTARY. Hippocrates has delivered many interesting remarks on sweats which occur in fevers. (See Epidem., Aphor., Prognost. *passim*.) Febrile sweats, attended with miliary eruptions, are held to be unfavorable. "In general," he says, "sweats proceed either from resolution of the body, or the intensity of the inflammation." (Prog.) In general he holds that febrile sweats, unless they occur on critical days are unfavorable. (Aphor.) COMM.

COMM. Galen remarks that profuse sweats are occasioned by rarity (i. e. relaxation) of the body, or redundance of the superfluity, or thinness thereof. The perspiration is checked, on the other hand, either because the superfluity is small in quantity, thick, and viscid; or because the pores of the skin are constricted. Either state, he adds, may arise from atony of the natural powers of the flesh. (De Causis Sympt. iii, 9.) He says, in another place, that for the removal of copious sweats astringent and refrigerant remedies are indicated, and that everything of a relaxing nature ought to be avoided. He recommends cold wine, and forbids all hot things, also ligatures to the extremities, emetics, and motion. He approves of cool air medicated by sprinkling the apartment of the sick with austere things, such as myrtles, vine shoots, and roses. (Therap. ad Glauc. ii.)

Celsus directs us, when the febrile sweats are slight, to rub the body with oil, and, when more profuse, with roses, quince ointment, or myrtle oil, to which austere wine is to be added. (iii, 6.)

Constantinus Africanus and his prototype Synesius concur in directing colliquative sweats to be checked by rubbing the body with oil of myrtles, of roses, &c. They commend an epitheme made of a decoction of roses, the flowers of the wild pomegranate, galls, and myrtle leaves, to which a proper proportion of oil is to be added. They also direct us to place beside the patient vessels filled with water, to sprinkle the apartment with myrtles, roses, &c. to give him the syrup of roses, in cold water, and to avoid exercise.

Actuarius takes notice of the miliary eruption which sometimes accompanies profuse sweats. He reckons it an unfavorable symptom. (Meth. Med. i, 58.) He also makes mention of other cutaneous eruptions, some resembling those produced by nettles, or the bites of gnats, and others of a red or black colour. (Ibid.)

Serapion recommends styptic and desiccative applications, such as galls, frankincense, alum, the flowers of vine, myrtles, and the like. (De Antidotis, vi, 20.)

Haly Abbas briefly recommends friction with styptic oils, and to remove the patient to a cool apartment. (Pract. iii, 24.)

Alsaharavius, in like manner, recommends friction with astringent oils, such as those prepared with roses, pomegranates, and the like. (xxxi, 2, 8.)

Avicenna and Rhases adopt the same plan of treatment as our author. The latter directs us to rub the body with rose oil, or myrtle oil, to sprinkle the patient with rose water in the decoction of myrtles, to fan him, and to lay in his chamber the tops of cooling herbs and trees. (Contin. xxxi.) COMM.

Prosper Alpinus informs us that the Methodists approved of cool air, of sprinkling the face with cold fluids, of rubbing the body with styptic oils, and of giving astringent wines internally. He also mentions the application of snow over the arteries of the extremities, and pouring cold water over those of the wrist. It is to be regretted, however, that this author too frequently omits to quote his ancient authorities. (See Medic. Method. vi, 18, and vii, 3.)

SECT. XLVIII.—ON COUGH IN FEVERS.

We must endeavour to remove a cough in fevers, more especially in such as come on with rigors, for it exasperates the fever when it is subsiding. We must give lozenges from boiled honey to hold below the tongue, for these melt and remove the substances which obstruct respiration. The time for using them is at the acme of the paroxysm, and a short time before the attack. Well-boiled hydromel must likewise be given. When there is no suspicion of the nerves being affected, in process of time you may give oxymel with confidence, or if not it, the decoction of hyssop, which is a remedy also for rigors. If the fever is not of the ardent kind, you may give castor, which is also of use to the nervous system. Electuaries may be used, made of the kernels of the common and wild pine, iris, linseed, bitter almonds, and nettle-seed. But the most of these may be mixed with the food. Turpentine-rosin should be given in an egg. To the chest and the parts about the trachea, apply a sulphurated woollen cloth, and oil of rue, or of iris, or of dill. Tight ligatures long applied are excellent for stopping cough, I mean to the middle and extremities. Nor will it be unsuitable to use for the cough stavesacre dried, which may be chewed with dried grapes or mastich. The extremities may be rubbed, chafed, and bound with ligatures, and afterwards the retracted parts unbound. But if the cough annoys, owing to the acrid nature

of the fever, we must use a gargle of tepid water. Cold water also is often useful; and, in like manner, gargles of oxycrate, or of the decoctions of dates, roses, or liquorice. Moderately cooling things are also to be laid over the bowels and heart.

Comm. COMMENTARY. Galen gives some ingenious remarks on the causes of coughing. He states that when any substance becomes fixed in the trachea, as it is a cartilaginous and hard tube, and incapable of contraction, nature brings on coughing, by which a violent expiration of air is induced. A cough, then, is nothing but a violent expiration by which nature endeavours to expel any body that obstructs the air-passages; and, when she cannot accomplish this at the first effort, she repeats it once and again until she effect her purpose. He goes on to state, that such fluids as are very watery, instead of being brought up, are merely divided or cut asunder by the current of air, while such as are thick and viscid, adhere so closely to the sides of the windpipe that they cannot be removed, and hence violent efforts are necessary to effect the discharge of them. (De Causis Sympt. ii, 4.) He treats fully of compositions for coughs in his work 'De Comp. Med. sec. Loc.' (vii.) See the 28th Section of the Third Book.

Avicenna recommends cough pills and lohocks made with poppies, the cold medulla of fruit, starch, and the like. (iv, i, 2.)

The prescriptions of Serapion contain liquorice, sweet almonds, tragacanth, and the like. (De Antidotis, vii, 17.) Those of Haly Abbas are very similar. (Pract. iii, 22.)

A receipt is given by Rhases for cough pills, the principal ingredients of which are tragacanth, sweet almonds, poppy seed, gum Arabic, and Armenian bole. (Divis. i, 52.) Many such receipts are given by Myrepsus.

SECT. XLIX.—ON SNEEZING.

Sneezing frequently occurring in fevers is troublesome, for it determines to the head and weakens the strength, and, in some cases, it produces a discharge of blood. Such are the bad effects of sneezing, which ought therefore, to be contended against. It is restrained by rubbing the nose, forehead, and eyes; by yawn-

ing, frequent friction of the roof of the mouth, eructation, stretching of the loins, raising the head, turning to the side, gently chafing the extremeties, anointing the masseter muscles, pouring hot oil into the ears, applying a warm cushion under the chin. It is proper to avoid being roused suddenly from sleep, and also smoke, dust, acrid smells, pepper, castor, mustard, and mint. The smell of apples and polenta is proper, for it blunts the desire of sneezing. The empty sea-sponges do the same. When there is a frequent desire of sneezing without the ability, let the lips be composed, let the patient smell to acrid substances, and let the mind be relaxed.

COMMENTARY. Galen explains that sneezing is a still more violent effort of nature than coughing, and that its intention is to remove irritating matters from the parts about the nose. (De Caus. Sympt. ii, 4.) COMM.

Avicenna gives ample directions for the treatment of sneezing; but they are evidently copied from our author. (iv, 1, 2.) The same may be said of Haly Abbas. (Pract. iii, 22.) Rhases recommends us to give warm gruel internally, to pour warm water on the head, and to apply oil of gourd, of roses, and the like, to the nostrils. (Cont. xxxi.)

Cassius Medicus discusses the question why rubbing the nose and eyes stops sneezing. He supposes that it is by occasioning a discharge from these parts, whereby the exciting cause is removed. (Probl. 45.)

SECT. L.—ON LOSS OF APPETITE.

When loss of appetite is occasioned by depraved humours, we must give those kinds of food and drink which will either clear away such humours by vomiting, or downwards by the bowels, or those that by dilution will render them better. You have the materials of these things treated of in the First Book of this work. Should the loss of appetite be occasioned by debility, since all debility is owing to an intemperament of the parts, we must cure the species of intemperament by its contraries. Wherefore we will give a more particular account of loss of appetite in treating of stomach complaints in the Third Book.

But in fevers we must straightway endeavour to bring back the appetite with aromatics, more particularly by giving polenta moistened with water, or oxycrate, or diluted wine, or a decoction of some of the fragrant and astringent fruits; by gentle unction and moderate friction of the whole body, by chafing, by bathing the face, and swallowing a small quantity of water; and, by putting the fingers down the throat, the stomach has been roused to bring up the food, more especially if the fluid discharged be bilious or acid. After the first days, cataplasms of dates, of apples, of the wild wine, of wormwood, and of aloes, ought to be applied over the stomach. Let a variety of simple food be prepared, and from grain, having some difference from the common articles, but not very different from those used in fevers; and among them those fruits which do not readily turn acid, nor are very sweet, but are ripe; however, they are not to be eaten to satiety, but only so as to whet the appetite for other food. While they are eating, the most delicious articles ought to be present, which may have the power to provoke and incite the desire. After the fever is gone, should the want of appetite continue during the recovery, yellow parsnip boiled with oxymel, and lettuces, and pickled olives, and capers, and pickles, the bulbi, and every other stomachic should be thought of; and, in particular, those things should be recollected in which the patient delighted most when in good health. Walking, gestation, vociferation, calefacient plasters, frictions, and exercises ought to be had recourse to. And drinking the propoma from wormwood, or from aloes, or swallowing the vinegar of squills to the amount of a mystrum, have proved excellent remedies.

COMM. COMMENTARY. Galen's explanation of the philosophy of the sense of appetite is very interesting. He remarks that the appetite is a refined species of touch, the seat of which is the mouth of the stomach, which, therefore, is supplied with nerves direct from the brain. He goes on to remark, that the earth is to plants what the stomach is to animals, supplying them with abundance of food as long as it is moistened by seasonable rains; but, when it becomes parched with drought, the plants in like manner are dried up for want of nutriment. (This comparison is borrowed without acknowledgment from Aristotle.) To animals, then, as not being fixed to the earth (with a few

exceptions), nature bestowed a stomach which is to them a repository of food, such as the earth is to plants, and she further gave them a sense of want by which they have the desire of being filled with food and drink in due season. This desire of being filled is called the appetite, which arises from a sense of want, when the veins of the stomach absorb, and, as it were, suck from it, whereby a painful feeling is excited, the proper cure of which is a supply of food. The sensation then of sucking constitutes hunger. The loss of appetite may arise either from the sense of the sucking being lost, or from the process of sucking (absorption?) not taking place, or from the body not being evacuated. (De Causis Sympt. i, 7.) He treats of stomach affections very fully in his work 'De Med. sec. Locos.' (viii.) COMM.

Treatment similar to our author's is recommended by Alexander (vii, 7), and by Oribasius (Synops. vi, 35.)

Avicenna evidently takes his plan of treatment from our author, for he recommends emetics, and afterwards fragrant things, with a plaster composed of fruits laid over the stomach, and wormwood, aloes, &c., internally. (iv, 1, 2, 26.) Among the causes of loss of appetite mentioned by him in another place are general disorder of the constitution in fevers, severe thirst, repletion with depraved humours, and insensibility of the mouth of the stomach, so that it does not perceive the suction of the veins. (iii, 13, 2, 7.)

Haly's treatment is nearly the same. He recommends fragrant food and fragrant wine after the acme of the fever, gentle laxatives, and such modes of exercise as he can bear. (Pract. iii, 21.)

SECT. LI.—ON BULIMOS OR INORDINATE HUNGER.

If want of appetite should pass into the opposite state, I mean an excessive atrophy, called bulimos, we must resuscitate such persons with roasted pork, or kids, and other savoury things; and, in a word, with every strong-scented thing, if the acute stage of the fever be past. We must bind the extremities, and rouse, by pinching the cheeks, and pulling the hair and ears. When recovered, we must give bread that has been dipped in diluted wine, or any other diffusible thing.

COMM. COMMENTARY. According to Galen, bulimos is occasioned by a want connected with atony, and coldness of the stomach. (De Caus. Sympt. i, 7.) Alexander, on the other hand, says, that it arises from inordinate heat and weakness of the stomach. He informs us that the vulgar practice consisted in giving fragrant things, binding the extremities, rousing by pinching, giving bread soaked in wine, and, in short, administering every thing calculated to cool and strengthen the body. Others, he says, give opium in cold water, in order to extinguish the heat of the stomach. However, he disapproves of all these things, and recommends food of difficult digestion. He relates the case of a woman affected with bulimia who was cured by having a purgative powder given to her, which occasioned the discharge of a worm more than twelve cubits long. (vii, 6.)

Aëtius and Oribasius adopt the theory of Galen, and recommend nearly the same treatment as our author. Aëtius also directs us to apply over the stomach cooling cataplasms made of dates, quinces, or polenta, boiled in diluted wine.

Serapion remarks that bulimos is distinguished from the canine appetite, by the desire in the former complaint being for proper articles of food, whereas, in the latter, it is for depraved or improper food. His treatment in most respects is like our author's. He also recommends a mixture of old odoriferous wine, camphor, and lignum aloes. (ii, 11.)

Avicenna and Haly Abbas agree with Galen in stating that bulimos is connected with a cold intemperament of the stomach, whereby the sensibility and attractive power of the stomach are diminished. Their treatment in principle is quite similar to our author's. In extreme cases they agree with Galen in recommending the theriac. One of Rhases' authorities recommends cardamom, cubebs, and the like. (Cont. xi.)

The classical reader is referred to Callimachus for a grand poetical description of Bulimia. (Hymnus in Cererem.)

SECT. LII.—ON THE CANINE APPETITE.

Although this symptom seldom occurs during fevers, it sometimes does afterwards; and, since it is allied to loss of appetite, as being the opposite extreme, it will not be improper to treat

of inordinate appetite, both of them being in excess. Since, therefore, this affection is generally occasioned by an acid phlegm, we must use those things which will divide and dissipate it. Such, in particular, are all sweet and saline things, and those which are called heating detergents. We must, therefore, give largely of the heating wines. Such are the yellow in colour, and those which are red without being styptic. We must also give them the sweeter kind, although they should not be thirsty. When they come to dinner, we must give them first all fatty things, and everything beside which is prepared with much oil, and has no austere or astringent property. These, although they should not overcome the cause of the complaint, at all events, destroy the insatiable desire of food; but abstinence from them lessens the collection of phlegm in the stomach. We must also give pickles, and after them, plenty of the afore-mentioned wines to be drank. By persevering with these things for some time, the complaint subsides.

COMMENTARY. According to Galen, one of the causes of the canine appetite is an acid cacochymy, and another is an immoderate evacuation of the whole body, occasioned either by strong heat or weakness of the retentive faculty. (u. a.) Hippocrates recommends the liberal use of wine, in one of his Aphorisms (ii, 21); and Galen, in his Commentary on the same, states that the wine should be tawny-coloured or red, and devoid of astringency. In another place, he directs us to purge away the offending humour with the hiera of aloes. (De Med. sec. Locos. viii.) COMM.

Our author borrows part from Oribasius. (Synops. vi, 34.)

Alsaharavius recommends the same plan of treatment as the Greeks, when the disease is connected with a cold intemperament; but when with a hot, he directs us to have recourse to bleeding, cold fruits, and cooling applications over the stomach. (Pract. xvi, 11.)

Rhases and Avicenna approve in general of our author's plan of treatment, to which, however, they suggest some improvements: when the cause of the complaint is an acid phlegm, they direct us to give fatty things, with mustard, pepper, garlic, and the like. When connected with black bile, they approve of bleeding. When it arises from worms, they, of course, ap-

Comm. prove of anthelmintics. Sarac, one of Rhases' authorities, recommends emetics and purgatives, with a cupping instrument applied over the stomach. (Contin. xi.)

Serapion's treatment is entirely like our author's. (ii, 10.)

SECT. LIII.—ON THIRST.

A protracted thirst may be supposed to be occasioned by dryness, or heat of the parts, by which liquids pass from the mouth to the stomach; and the natural cure of dryness is sleep, and of heat, watching. Some become thirsty from wine, or the heating nature of their food, in which case, the proper cure is cold drink. But some desire drink of a bad quality, as they do food corresponding to the prevailing cacochymy. I have known persons seized with unquenchable thirst, of which they died, who had eaten of the vipers called dipsades, and others who had got drunk upon old wine; and also persons on board of a ship, who, when their fresh water failed them, had drunk of sea-water, have all died. Febrile thirst may be mitigated, by pouring upon the head the coldest oil, or rose oil. But the best remedy for thirst is the seed of the black lettuce, chewed, or the liquorice; or, seed of the cucumber may be retained in the mouth. Give also the following pill, called adipson: Of garden cucumber, dr. viij; of tragacanth, dr. iv; dissolve the tragacanth in the white of fresh eggs, and when dissolved, add to the pounded seeds of the cucumber; and when softened, form pills, which dry in the shade. Give one of these pills to hold below the tongue, and drink the fluid of it as it dissolves. Give also, to swallow, the decoction of quinces, or of pears, or of medlars, or of the tendrils of the vine, or the juice of the pomegranate.

Comm. Commentary. The greater part of this Section is taken from Galen (de Caus. Symp. l. c.), who, as usual, handles the subject very philosophically. Oribasius treats of it in nearly the same terms as our author. (Synops. vi, 37, 38, 39.) Aëtius remarks that there are two causes of thirst, a want of humidity, or a redundance of heat. In fevers, then, both these causes cooperate to occasion thirst; for there is excess of heat originally,

and dryness comes on owing to the fluids of the body being consumed by the febrile heat. (v, 119.) COMM.

The question was keenly agitated in the ancient schools of medicine, whether cold drink might be safely given in fevers. Hippocrates was a great advocate for this practice, giving his patients barley-water and acidulated draughts very freely at all periods. Asclepiades, on the other hand, as Celsus and Alexander inform us, forbade even to wash the patient's mouth with water during the first stage of a fever. Celsus is disposed to hold a middle course between these opposite methods of practice. He particularly approves of washing the mouth and fauces frequently with cold water, because, as Erasistratus had properly remarked, these parts often required cold liquids, while the internal parts are not in want of them. Philumenus (ap. Aëtium) also strongly recommends gargles, but forbids cold drink freely until after the acme of the fever. Alexander informs us that the celebrated Archigenes allowed his patients the free use of cold water and acidulated drinks. He himself does not speak very decidedly for or against this practice, but, upon the whole, is disposed to think well of it, unless there be inflammation, hardness, or swelling anywhere. He approves, however, of cold applications externally: and, accordingly, directs us to apply to the region of the stomach a bladder filled with cold water, ice, or some cooling decoction.

Of the Arabians, Serapion expresses himself most decidedly in favour of cold drink. Avicenna forbids much to be given at a time. See also Haly Abbas (Pract. iii, 22); Alsaharavius (Pract. xvi, 14); Averrhoes (Collig. vii, 24); and Rhases (Contin. xxx.)

The pill mentioned in the end of the Section is from Dioscorides.

Prosper Alpinus represents the Methodists to have disapproved of the free use of cold water in fever. (Med. Meth. vi, 7.)

The highest of the ancient authorities, as for example, Galen, Avicenna, and Averrhoes, agreed in allowing wine, much diluted with water, in fevers. Galen says, the wine should be attenuant and of a light colour. According to Avicenna, wine thus plenteously diluted with water is preferable to plain water, as it promotes perspiration.

Fabius Paulinus gives an admirable exposition of the philo-

COMM. sophical doctrines of the ancients on this subject. He remarks that there are three distinct species of thirst. The first is occasioned by the fauces and œsophagus being drier or hotter than natural. This state, if it supervene upon sleep, is to be cured by watchfulness, or *vice versa*. In the second, the veins over the whole body are filled with hot and acrid humours. In the third, the mouth of the stomach, lungs, or heart are preternaturally hot or dry. (Marc. Prælect. 315.)

SECT. LIV.—ON THE ROUGHNESS OF THE TONGUE.

We may moisten asperity of the tongue, by making the patients retain in the mouth a decoction of linseed. But it will be more efficacious if sebesten plums be boiled with the linseed. Having immersed the finger in this liquor, and rubbed the tongue with it, let them rinse the mouth with clear water, or let them clean it with a sponge, and then anoint it with rose oil. And the oil of roses mixed with honey also answers well. Likewise the juice of the purslain retained in the mouth, and the sumach used for condiments, when mixed with honied water, have a good effect. Damascenes, also, and the bones of the sebesten plum retained in the mouth, and rolled on the tongue, and the stem of the lettuce, answer well. Archigenes says, that the Indian salt, which, in colour and consistence is like the common salt, but which resembles honey in taste, when chewed to the size of a lentil, or, at most, of a bean, moistens greatly. They should lie upon the side (for lying upon the back dries greatly), and they ought to keep the mouth shut, because keeping it open allows the moisture to dry up. Sneezing properly produced, moistens the tongue more effectually than any other means.

COMM. COMMENTARY. This Section is taken from Oribasius. (Synops. vi, 43.)

Aëtius recommends nearly the same treatment. He also states, that when the roughness of the tongue is difficult to remove, it may sometimes be accomplished by rubbing it with the fat of fowls or with fresh butter. (v, 118.)

Cælius Aurelianus directs the tongue to be cleaned with a

sponge squeezed out of hot water. Avicenna recommends for this purpose an instrument called *chaizaran*, and also directs us to use sugar, or a sponge with a small quantity of salt and rose oil. He likewise makes mention of the salt brought from India, possessing the colour of salt and the taste of honey. (iv, 1, 2, 22.) The Pseudo-Dioscorides recommends mint triturated with honey, red sumach, and rose oil with honey, or by itself. (Euporist. ii, 18.) COMM.

Prosper Alpinus held that the Indian salt, mentioned by our author and Avicenna, was the same as our sugar. But this opinion was controverted by Carolus Arantius, (Baptista Fieræ Cœna.) Sprengel, accordingly, maintains that the Greeks and Romans were utterly unacquainted with our sugar. (Rei Herb. Hist., and Notæ in Dioscoridem, ii, 104.) The mel arundinum appears, in fact, to have been a natural concretion, and it was most probably the same as the Indian salt. See Dr. Milward's Letter to Sir Hans Sloane. The cane from which the ancient sugar was procured is now called by botanists the *bambusa arundinacea*, or bamboo cane. See Book First, 96.

SECT. LV.—ON NAUSEA.

When nausea comes on without being produced artificially, it is a clear inference that noxious humours are vexing the stomach. Some feel uneasy, but vomit nothing, the humour being retained in the coats. When the humours are pituitous, we must get them concocted by rest, spare diet, and sleep. But the thinner may be ejected by vomiting, produced either with the juice of ptisan, or with honied water. But those which are viscid and thick, stand in need of attenuant remedies, such as oxymel, and the like. But, when a noxious fluid is detained in the coats, the powder from aloes, called picra, is beneficial, but astringents are pernicious; whereas, if there be much fluid, but not of a noxious kind, astringents will be beneficial, but the aloetic medicine will bring on marasmus. When cold is joined to humidity, we must mix calefacients with astringents. The symptom of the affection being of a cold nature is that there is no thirst, nor sensation of heat.

COMM. COMMENTARY. Oribasius recommends the same treatment. (Synops. vi, 40.) Our author appears to have condensed the lengthy account given by Galen and Aëtius. (ix, v.)

Alexander also treats of the subject at great length, but we can only afford room for a few extracts. When the nausea arises from plethora, he directs bleeding; and when the plethora is connected with vitiated humours, he recommends both bleeding and purging. When bilious or melancholic humours occasion the nausea, he recommends dilution at first by giving tepid water or the like, and then evacuations of them by purging or emetics. When the humour is an acrid or sweet phlegm, he recommends oxymel, radishes, and the like. When a serous and thin humour is impacted in the stomach, he evacuates it by procuring vomiting with tepid water or ptisan. (vii, 13.)

Serapion appears to have copied from our author. (iii, 5.) See Avicenna (iii, xiii, 5, 8.) Rhases applies over the stomach a cold plaster with snow. When the nausea is oppressive, he promotes vomiting with tepid water. (Cont. xi.)

SECT. LVI.—ON VOMITING OF BILE.

To those who vomit bile, a cataplasm must be applied, made of dates, the rind of pomegranate, and gall, boiled in wine or oxycrate, along with pounded bread. And acacia, hypocystis, and the flowers of the wild pomegranate and sumach, ought to be added to the cataplasm. A cupping-instrument also, when applied with a strong heat, is of great service. Food ought to be given frequently in small quantities. To those who vomit black bile and have the stomach inflated, apply sponges soaked in hot vinegar of the most acrid qualities, or a cataplasm of the leaves of the ivy boiled in wine.

COMM. COMMENTARY. This is taken from Oribasius (Synops. vi, 41.) Alexander states that the proper remedies for vomiting occasioned by a redundance of bile are diluents and refrigerants. He recommends internally ptisan, lettuces with a small quantity of vinegar, &c. For drink, he particularly approves of cold water, but forbids much to be given at a time. When the strength fails, he permits a small proportion of hydromel, wine,

or the like, to be added to the water. In certain cases, when the patient is troubled with insomnolency, he directs us to add the heads of poppies to his drink. He also recommends external applications possessed of tonic, cooling, and repellent properties. (vii, 17.) COMM.

Serapion recommends us not to interfere with a critical vomiting. When it is continued, he directs us to give clysters and gentle purgatives at first, and afterwards vegetable acids and astringents. When these remedies fail, he directs us, if the strength be good, to bleed from the arm. He also makes mention of external applications, possessed of astringent and refrigerant properties. (iii, 15.) Haly Abbas, in like manner, cautions against stopping a critical vomiting. (iii, 24.) Alsaharavius prescribes draughts of tepid water at first, and afterwards the infusion of wormwood or of aloes. He also recommends external applications of a strengthening nature. (Pract. xvi, 20.) Avicenna's plan of treatment appears to have been copied from our author's. (iv, i, 2.) Rhases recommends acid drinks, such as the decoction of pomegranates and the like. (Cont. xi.)

According to Prosper Alpinus, the treatment of the Methodists consisted in administering sub-acid fruits, the juice of wormwood or of mint in wine, and in applying externally tonic epithemes, containing sumach, galls, mastich, and the like. (Med. Meth. xii, 11.)

SECT. LVII.—ON HICCOUGH.

Singultus is occasioned either by fulness, or emptiness; or by the presence of acrid and pungent humours in the stomach, and when they are vomited, it ceases. And many, if they only take the medicine composed of the three kinds of pepper, and drink wine immediately after, have hiccough. And it is well known that many people hiccup when the food spoils on the stomach. Many also hiccup from rigors. We will find an emetic a proper remedy in cases which are occasioned by fulness or pungency, and warmth in those from cold; and, when the complaint is occasioned by a plethora of humours, there is need of strong evacuation. This may be accomplished by sneezing, but when emptiness is the cause, sneezing will not cure it; for in such

cases, we must give rue with wine, or nitre in honied water, or hartwort, or carrot, or cumin, or ginger, or calamint, or Celtic nard. These are the remedies for such cases as are occasioned by corruption of the food, cold, or plethora. When a redundance of cold and viscid humours is the cause, give castor to the amount of three oboli to drink in oxycrate, and the same thing will be of use when applied externally to the skin, along with old Sicyonian oil. The vinegar of squills or oxymel may also be drunk with advantage. Retaining the breath is likewise of great use.

COMM. COMMENTARY. This Section is copied from Oribasius (Synops. vi, 42.)

According to Galen's explanation, hiccough is occasioned by any exciting cause which rouses the stomach to violent emotions. He states that sneezing proves a cure to it. (De Caus. Sym. iii, 6.) Celsus says, in like manner, 'Singultus sternutamento finitur.' He states that frequent and unusual hiccuping is symptomatic of an inflamed liver. (ii, 7.) Aëtius, in like manner, says that singultus in fevers often arises from inflammation of the stomach and neighbouring parts. He treats of the complaint at great length. When it arises from pungent humours, he gives first emetics, and afterwards narcotics, such as opium, &c. He also applies a cupping instrument with great heat to the breast, stomach, and back, in certain cases. (ix, 5.)

Alexander gives an interesting account of this affection, for which he recommends various remedies. When connected with inflammation of the stomach or liver, he begins with bleeding. When it is occasioned by thick and viscid humours, he recommends an oxymel of squills, the composition of which he minutely describes. He also speaks favorably of emetics. When the humours are of a pungent nature he approves of diluents and the drinking of tepid water. Sometimes, he adds, he has known a draught of cold water prove effectual. (vii, 15.)

When singultus is connected with a cold cause, the author of the 'Euporista,' ascribed to Dioscorides, recommends us to put the feet into hot water, to take tepid draughts, and apply hot fomentations to the stomach. (ii, 4.)

Though there is perhaps nothing original in the views of the Arabians, they treat of hiccough very fully and accurately. Among the causes of it, mentioned by Alsaharavius, is inflam-

mation of the stomach and liver, in which case he recommends venesection. When connected with excessive heat of these parts, he approves of cold air, cold drink, and refrigerant draughts, containing prunes, tamarinds, camphor, &c. (xvi, 18.) The causes of hiccough, according to Serapion, are evacuation, repletion, pungent and cold humours. His remedies are emetics, calefacients, and attenuants, which are to be directed according to the nature of the exciting cause. (iii, 17.) See also Avicenna (iii, 13, v, 25); Rhases (Divis. 62, ad Mansor. ix, 65, Cont. xi.) Rhases recommends calefacients, such as cumin, pepper, rue, and the like, in vinegar. He also approves of emetics and laxatives. COMM.

Prosper Alpinus says that the ancient Methodists approved of oily emetics. (Meth. Med. vi, 8.) It will be remarked, that our author states that many persons are seized with hiccough if they take peppers with wine. Prosper Alpinus mentions that they had this effect on him (de Præs. V. et M. ægr. iii, 9); and I have further to state the same of myself.

Rogerius, probably copying from Rhases (for the practice of the earlier modern physicians is mostly borrowed from the Arabians), recommends principally calefacient, attenuant, and carminative medicines, mixed with gentle laxatives, such as prunes. (iii, 21.)

SECT. LVIII.—ON CONSTIPATION AND LOOSENESS OF THE BOWELS IN FEVERS.

Those things which remedy a dry state of the bowels are treated of in the First Book sufficiently. But since a humid or loose state of the bowels may prevail in fevers, this also must be treated of; for many are cut off not by the fever itself, but by this symptom alone. In the commencement, we must not interfere with the discharge when it proceeds from corruption of the food and indigestion; but when the evacuation becomes immoderate, it must be restrained. If the discharges are of an acrid nature, that which is given should consist of good juices, and be otherwise thick, such as spoon-meats from pearl-spelt (chondrus) and ptisan. Baths are also befitting after the complaint has become concocted. But when the discharges consist of phlegm

and are watery, on the other hand, the food ought to be of a more dry and heating nature, as far as the fever will permit. Of this kind, are those things which are prepared from heating condiments. But they must abstain from baths, unless otherwise required. When the digestive faculty is in an atonic state, we must give food and applications of an astringent nature; the food consisting of things in particular, to which pomegranates, apples, pears, or medlars have been added, or these fruits themselves, and thin fragrant wine of an astringent quality; and the applications are to be cataplasms made of polenta, and dates, and wormwood, roses, myrtles, and such like things. It must be considered also, to what part these cataplasms are to be applied, I mean the region of the stomach, the lower belly, or perhaps the loins. Bloody discharges are restrained and dried up by remedies containing fine flour of polenta, with frankincense, or manna mixed with wine, or oxycrate. When the watery discharge is acrid, it must be sweetened by a *lavement* either with water alone, or the juice of ptisan, or of chondrus, or rice, or tragum, not once, but often; and afterwards there are to be added dried roses, or myrtles, and sometimes galls; and an egg with rose oil, and a thin astringent wine, or the decoction of roses, may be injected or applied to the anus, which will blunt the desire of going to stool. But when the calls are frequent, a clew formed of warm threads may be applied to the anus.

COMM. COMMENTARY. Galen forbids venesection when the fever is complicated with diarrhœa. (Therap. ad Glauc. i.)

When the body is constipated, Celsus recommends laxatives, diuretics, and sudorifics. He adds, it may also be proper to let blood, practise gestation, enjoin abstinence from food and drink, and keep the patient from sleeping. He likewise recommends the bath, both of tepid water and of oil. When the bowels are loose he enjoins rest and sleep, gives medicines to restrain sweating, and forbids all exercise except gentle gestation. He also directs us to excite vomiting by copious draughts of tepid water, unless the complaint be of long standing, or there be pain of the throat, præcordia, or side. (iii, 6.)

Alexander forbids narcotics, unless in cases of extreme urgency. Avicenna joins him in laying down this injunction, and otherwise directs us to treat the diarrhœa febrilis upon general

principles. (iii, 16, 1, 4.) Haly Abbas treats fever, when complicated with constipation, by giving gentle laxatives, such as prunes and tamarinds, or, if these prove injurious to the stomach, by administering clysters. When the diarrhœa is complicated with a discharge of blood, he approves of adding to the other medicines Armenian earth, purslain, sumach, or such like astringents. (Pract. iii, 24.) See Serapion (iii, 17); Rhases (Divis. 67.) COMM.

According to Prosper Alpinus, the ancient Methodists approved of astringent applications and astringent clysters for febrile diarrhœa. (Med. Meth. vi, 10.) Sydenham and Van Swieten agree with Alexander and Avicenna in forbidding to stop diarrhœa in fevers by means of opiates, unless in extreme cases.

SECT. LIX.—ON TRICKLING OF BLOOD AND HEMORRHAGE FROM THE NOSE.

Since a trickling of blood indicates a fulness in the whole body, or in the head, being occasioned either by expression or contraction, and as a free evacuation would relax them, and diminish the quantity, it may be proper to evacuate where nature points. With this view, I have ventured, in cases of quartan epistaxis, to open the vessels in the nostrils with the reed called typha. We must not be contented with a small evacuation, but must take away blood in proportion to the strength. Spontaneous hemorrhages from the nose in fevers, when critical, are not to be interfered with; but yet, if the flow of blood be immoderate, it ought to be restrained. In the first place, tight ligatures ought to be applied to the patient's extremities, and his head elevated. It would appear that a ligature to the privy parts, is particularly adapted for restraining bleeding from the nose. The nostrils ought not to be wiped, nor the part irritated, so that a clot of blood may be allowed to form. Let the nose be cooled by a sponge soaked in oxycrate, and the nostril plugged up with a pledget dipped in some of the astringent applications. The composition of them, and the rest of the treatment, we will deliver more fully in the following Book, "on topical affections."

COMM. COMMENTARY. Hippocrates declares that profuse bleeding at the nose indicates a disposition to convulsions, which venesection is calculated to remove. (Prædict. i, 21.) Galen, in his Commentary, remarks that the convulsions are brought on by the unseasonable use of cold applications to stop the hemorrhage. He strongly recommends bleeding from the arm of the side from which the blood flows. In another place, he states that epistaxis in acute fevers is an unfavorable symptom. (In iii, Epidem. Comment.)

Aëtius mentions that Hippocrates had declared a bleeding from the nose on the fourth day of a fever to be a very bad symptom. He recommends encouraging the bleeding by irritating the nostrils with a stalk of grass. Our author, it will be observed, directs this operation to be performed with the *typha*, a species of grain several times mentioned by Theophrastus (Hist. Plant.); by Galen (de Aliment. i, 13); and by Alexander Trallian (vii, 5.) Sprengel makes it to be a species of secale or rye; but Stackhouse, the English editor of Theophrastus, is of opinion that it was the *triticum spelta*, or spelt.

When it is judged proper to restrain the hemorrhage, Avicenna recommends ligatures to the extremities and cold and styptic applications to the nose and adjoining parts. (iv, i, 2, 14, and iii, v, 1.) Serapion agrees with most of the ancient authorities in commending a mixture of frankincense and aloes, when applied on the down of a hare. He also directs us to apply a sponge soaked in cold water to the temples and forehead. (ii, 13.) When bleeding at the nose occurs in a fever, Rhases forbids us to stop it, unless it prove excessive; in which case, he directs us to apply a cupping instrument, without scarification, to the hypochondrium; to tie ligatures about the testicles; to pour cold water on the head; and to drink cold water. (Divis. 40.)

Considering how full and accurate our author and the others are in treating of the complications of fever, it is singular that they should all have passed by a profuse discharge of blood per anum, although it had been noticed by Hippocrates. In one of his Aphorisms he says: "When, in cases of fever, there is a quantity of blood discharged, the bowels get into a loose state." His commentators Theophilus and Damascius say, in explanation, that the natural heat of the intestines being wasted by the discharge of blood, they lose their power of retention. (Ed. Dietz, ii, 401.)

SECT. LX.—ON DELIQUIUM ANIMI OR SWOONING.

When the fainting is occasioned by cholera, diarrhœa, or other repeated and copious evacuations, we must sprinkle water upon the patient, twist his nose, rub over the orifice of the stomach, and encourage vomiting; and we should also irritate the throat with our fingers or the introduction of a feather. Several strong ligatures are likewise to be applied; when the evacuations are downwards, to the arms; and, when upwards, to the legs. The patients are also to be placed in an easy, erect posture, and a cupping-instrument applied, so as to produce revulsion to the opposite part of the body. Wine and water relieves prostration of strength occasioned by frequent evacuations, provided there be no inflammation of any visceral part, nor violent headach, nor delirium, nor ardent fever unconcocted, to contra-indicate it; for in such cases wine will do much mischief. And if it be summer, and the patient of a hot temperament, and addicted to drink cold things, we may give cold drink; but if the contrary, warm. When the deliquium is occasioned by profuse sweats, we are to constrict the skin, as formerly said, and allow a free current of cool air. In defluxions on the stomach, none of these things is fitting, unless the application of strengthening things to the belly and stomach, and bathing them; for baths are most beneficial in cases of stomach defluxions, but greatly aggravate hemorrhages and sweatings. Those who have fainting fits from plethora, must abstain from wine, and food, and from baths too, if there be fever. And we must give them honied water having thyme, marjoram, pennyroyal, or hyssop boiled in it. Oxymel also is beneficial to them. But if the faintings proceed from depraved humours contained in the stomach, we must prescribe a vomit with water and oil—at the same time tickling the throat with the finger or a feather. But if vomiting cannot be thereby procured, we must give pure oil, which will often evacuate downwards. And wormwood is applicable in such cases. But if the faintings are occasioned by weakness of the stomach, we must use tonic medicines, as formerly stated in the Section which treats of this affection, and rub the extremities. When they proceed from exposure to immoderate heat, we are to prescribe the bath; or, when from excessive cold, we must use the medi-

cine containing the three peppers, and pepper itself. Those who fall into fainting fits owing to great heat, or insolation, or from remaining long in the bath, may be cured by being sprinkled with cold water, and exposed to the wind; by having their stomach rubbed, and getting wine and food. But if the swooning be occasioned by the greatness of the inflammation, or bad nature of the fever in the attacks, and if the patient is cold, we ought to rub his limbs strongly, chafe him, apply ligatures, force him to keep awake, and abstain from food. And these things are to be done previous to the paroxysm. But those who have faintings from dryness, should get for food two or three hours before the paroxysm either the juice of chondrus, or bread out of water, along with the kernels of the pomegranate, or apples, or pears. But if great danger be anticipated, we must also give wine. Those who have sudden attacks of fainting are to be thus treated. And in all cases we are to find out the cause of the deliquium, and direct our attention to it. And sometimes the greatest care must be bestowed upon this symptom, which threatens danger, or death itself.

COMM. COMMENTARY. Nearly the same account of deliquium animi in fevers is given by Aëtius (v, 101 et seq.), and by Oribasius (de Morb. Curat. iii, 7.) But all these authors are, in fact, indebted to Galen. (Therap. ad Glauc. i.) Aëtius thus states the distinction between syncope and deliquium: "Deliquium makes its attack suddenly, depriving the person of sense and motion, but is not necessarily accompanied with sweats; but syncope seizes upon persons both when asleep and when awake, and is necessarily attended with sweats, called syncoptic."

Alexander delivers a full account of the subject; but his principles of treatment scarcely differ in any respect from those of Galen. (xii, 13.)

Haly Abbas directs us, when the deliquium proceeds from a defluxion of humours upon the stomach, to apply ligatures to the extremities, to dash water on the face, to fan it, and to give vinegar and pepper. He recommends us to prevent sleep, which has a tendency to extinguish the powers of the primary viscera, by occasioning a determination inwardly. When it proceeds from dryness, he directs us to give wine, the decoction of quinces, of apples, and the like. If it happen at the commencement,

he recommends a piece of bread soaked in wine to be given. (Pract. iii, 25.) COMM.

The Arabians in general do not acknowledge the distinction between syncope and deliquium. See Averrhoes (Colliget. vii, 16); Serapion (vi, 19); Rhases (ad Mansor. x, 13.)

Avicenna seems to point at the distinction, but it is not perceived by his translator. Rhases recommends the same treatment as Haly Abbas. He approves of hot wine, food of easy digestion, sprinkling of the face with cold water, and the application of ligatures to the extremities. (Contin. xxxi.)

SECT. LXI.—ON THE TREATMENT OF ULCERATION UPON THE OS SACRUM.

This affection occurs most frequently in protracted fevers, owing to the patients having been long confined to bed. When, therefore, the part begins to appear red, we make a circular piece of wool, of the proper magnitude, and lay it below the part, and afterwards prepare a rose or myrtle cerate, containing litharge or ceruse, and apply it. When there is inflammation, we may use a cataplasm of bread, with nightshade, or knot-grass, or plantain, or tender cabbage. But if the ulceration be spreading, we are to use a cataplasm of dried lentils, along with the inner rind of the pomegranate.

COMMENTARY. This Section is taken from Oribasius (Synops. vi, 44.) COMM.

Aëtius remarks that, in prolonged fevers, the fleshy parts of the body being wasted, ulceration takes place in those parts upon which the patient lies. These sores, he adds, spread deep, and have hard thick edges. When the back becomes red and painful, he directs us to surround the adjoining parts with a circle of wool, so as to relieve the affected part from the effects of pressure; and then a cerate of rose or myrtle oil, containing litharge, ceruse, and burnt barley is to be applied. He particularly commends a composition consisting of litharge, oil, wax, and honey, mixed with rose-oil. In short, his plan of treatment, like our author's, is borrowed from Oribasius. He concludes with di-

COMM. recting the use of milder applications when the ulceration has stopped spreading. (v, 127.)

Alsaharavius directs us to treat the redness of the back occasioned by lying long in bed with the flower of millet, barley, or lentils. When pustules form and break, he recommends an ointment containing ceruse to be applied. (Pract. xxix, 1, 26.)

Appendix to the Commentary on Book Second.

ON SMALLPOX AND MEASLES.

The reader, we are sure, would be disappointed, if we were to quit the subject of Fever without touching upon the history of Smallpox and Measles. We will, therefore, conformably with our general plan, give a brief abstract of the descriptions of these diseases which we meet with in the works of the ancient physicians. In the first place, then, we may mention that, after having read, we may say, every word of every ancient writer on medicine that has come down to us, we can confidently affirm that the Greeks and Romans are altogether silent on the subject, and that we are indebted to the Arabians for the earliest accounts which we have of these diseases. Rhases, indeed, pretends (provided the Introduction to his 'Treatise on Smallpox' be not spurious) that Galen had delivered some imperfect descriptions of smallpox; but he would appear to have been led into this mistake by following some inaccurate translation of the works of Galen into the Syriac language; for no passages which would justify the interpretation which Rhases puts upon them are now to be found in the original. Lately, Dr. Bateman attempted to show that allusions to measles and smallpox are to be met with in the works of several of the Greek authors; but we entirely agree with Drs. Mead and Freind, who maintain the contrary. In an Arabian MS. preserved in the University of Leyden, it is stated that the smallpox and measles first appeared in Arabia about the year 572, A.C. See Reiske (Opuscula Medica, p. 10.)

Although Rhases be the most ancient writer whose account of smallpox and measles has come down to us, he does not

pretend to have been the first of his countrymen who had noticed them, but gives extracts from the works of the elder Mesue, the elder Serapion and Aaron, wherein mention is made of them. According to Rhases, the common cause of smallpox is a fermentation in the blood; and hence the disease is most apt to seize children, whose blood is hotter than that of other persons. He was well aware, however, that the disease is capable of being propagated by contagion, for he ranks the pestilential fever or smallpox among the diseases "qui transeunt ab uno ad alios." The symptoms, as described by him, are, continued fever, pain in the back, itching at the nose, disturbed sleep, and afterwards redness and fulness of the face, pain of the throat, difficulty of breathing, dryness of the mouth, thick spittle, hoarseness, headach, inquietude; and these symptoms are followed by the characteristic eruption of the smallpox or measles; but in the case of the latter there is more anxiety of mind, sick qualms, and heaviness of heart; and in that of the former there is more pain in the back, heat, and inflammation of the whole body, especially in the throat, with a shining redness. He then lays down the rules of treatment. He directs us to bleed from the arm at the commencement, provided the patient be more than fourteen years old, but by a cupping instrument if he be younger. He forbids us, however, to abstract blood after the eruption is come out. He allows light kinds of animal food, with acids; and for drink he recommends water cooled with snow, or cold spring water, or some diluent and acid draught, such as barley-water acidulated with pomegranate juice. Aaron, one of his authorities, forbids, however, the administration of cold water when the eruption is coming out. He directs the chamber to be sprinkled with cold water, and even at a certain stage permits the patient to go into the cold bath. He recommends abstinence from new milk, wine, dates, honey, mutton, beef, shellfish, and all high-seasoned and heating things. The rest of his general treatment we need not give in detail. Suffice it to say, that the medicines recommended by him are, for the most part, vegetable acids and astringents. Upon the whole, the earlier part of his treatment consists of bleeding, cold drinks, and acid draughts. For hastening the eruption, when that is desirable, he directs us to wrap up the patient closely in clothes; to rub his body all over; to keep him in a room not very cold; COMM.

COMM. to give him some cold water to drink; to put on a double shirt; and to place near him two small basins of very hot water, one before and the other behind him, so that the vapour may be diffused all over his body, except the face; but he prudently directs us not to allow the moisture to cool upon the body, but to get it carefully wiped off. All furnaces and hot baths he condemns, as overheating and weakening. He very much commends figs for promoting the eruption. He afterwards gives very minute directions about the treatment of particular parts, such as the eyes, the throat, and the nose. For the eyes, he recommends various astringent lotions or collyria, such as galls and rose-water, sumach, pomegranate rind, &c. The care of the throat he justly holds to be a very important consideration, and recommends bleeding when there is acute pain, and gargling with cold water, or with astringent decoctions, such as those of acid pomegranates, sumach, and the juice of mulberries. When the pustules on the limbs are large, he directs us to open them; and when there is great pain in the soles, he recommends them to be rubbed with warm oil, or the feet to be put into hot water. When the pustules seem to stand in need of ripening, he directs the body to be fomented with the steam arising from a hot decoction of chamomile, violets, and the like; and, when too humid, the patient is to be laid on pounded roses, rice-meal, or millet seed. For removing the scabs and eschars, he recommends us to rub them with the warm oil of sesame, or oil of pistaches; but the larger are to be cut off carefully without any application of oil. For removing the specks on the eye he recommends many stimulant collyria, containing antimony, verdigris, sal ammoniac, tutty, camphor, &c. For removing cicatrices or marks on other parts of the body, he mentions various applications, containing litharge, bastard spurge, &c. When the belly is loose, either in smallpox or measles, which, as he remarks, is commonly the case on the decline of the fever, he recommends abstinence from all laxative things, and commends barley-gruel, to which the meal of pomegranate seeds may be added; or, if the looseness increase, gum arabic, &c. may be added to the drink. He adds, that it sometimes happens that the bowels require to be opened, and he directs this to be done by means of myrobalans, prunes, and the like. When in measles there is much appearance of vitiated bile, he directs

the discharge of it to be promoted. He points out the difference between distinct and confluent smallpox; and remarks that the latter is far more dangerous than the other. He also correctly states that when, in measles or smallpox, the eruption is suddenly determined inwardly, it is a fatal symptom. He all along inculcates that measles and smallpox are nearly allied to each other. COMM.

Georgius, one of the authorities quoted in his 'Continens,' says that measles arise from blood mixed with much bile, and smallpox from gross blood mixed with much humidity. He states that the danger is proportionate to the pain in the throat and difficulty of breathing. The elder Serapion, as quoted by him in the same work, directs, if it is the winter season, the wood of tamarisk, &c. to be burned beside the patient.

In his work 'Ad Mansorem,' he recommends nearly the same treatment as that which we have been detailing from his Tractatus on Smallpox; but does not speak so decidedly in favour of cold drink.

Avicenna's description of smallpox and measles is very similar to that of Rhases. He confidently pronounces them to be contagious diseases. He states correctly, that when smallpox proves fatal, it is usually from the affection of the throat, or from the bowels becoming ulcerated. Sometimes, he adds, the disease superinduces bloody urine. He agrees with Rhases that measles is a bilious affection, and that it differs from smallpox only in this, that in the former the morbific matter is in smaller quantity, and does not pass the cuticle. His treatment also is little different. At any period during the first four days he approves of venesection, but forbids it afterwards. He recommends cooling and diluent draughts prepared from tamarinds and the like. He prescribes figs to facilitate the eruption of the pustules, and forbids cold drink after they begin to come out. When the pustules are large and fully formed, he approves of letting out their contents with a gold needle. His treatment of the throat, eyes, belly, and hands is nearly the same as that recommended by Rhases. When ulcers are formed after the falling off of the eschars, he directs them to be dressed with the white ointment, composed of ceruse and litharge. (iii, 1, 4.)

Serapion's account of smallpox and measles, as is remarked by Haly Abbas, is very defective. He treats of them along

Comm. with apostemes, and his description of the symptoms is far from being accurate.

Avenzoar, in his Treatise on Epidemical Diseases, treats incidentally of measles and smallpox, for the cure of which he recommends principally gentle purgatives, such as tamarinds, with cooling and acid drinks. (iii, 3, 4.)

Alsaharavius also mentions them briefly among the pestilential diseases; but his description of them is not to be compared with that of Rhases.

According to Haly Abbas, variola is produced either by external causes, such as a pestilential state of the atmosphere, or from respiring the air of a place which has been tainted with the effluvia from the pustules of persons affected with the disease; or it may arise from an ebullition of the blood when it is loaded with gross humours which nature endeavours to cast outwards. He then briefly describes several varieties of the disease, differing from one another in degrees of malignity; and among them he ranks rubeola, which is occasioned, he says, by a hot thin blood, and is not of a bad nature. In it, he says, the eruption, when at its height, resembles millet seeds, or is somewhat larger, the colour is red, and the pustules discharge nothing. The precursory symptoms of smallpox are fever, swelling of the face, itching of the nose, inflammation and redness in the face and other members, heaviness of the head, and roughness of the throat. (Theor. viii, 14.) With regard to the treatment of variola and rubeola, he recommends venesection during any of the first three days; or, if the patient be a child, he directs us to apply a cupping instrument to the back. The patient is then to be made to drink barley-water in which jujubes and sebesten plums have been boiled; syrup of poppies is to be added, if the cough be troublesome, or the pain of the throat severe; and spoon-meats prepared with spinage, orach, and the like, are to be given. When the eruption does not come properly out, he recommends a decoction of fennel, lentils, figs, &c. to be taken cold.—By the way, this practice is favorably mentioned by Fracastorius, a writer of the 16th century (De Morb. Cont.) For asperity in the chest he recommends the mucilage of fleawort, linseed, and the like, and forbids all heating things. The patient is to be kept upon a low diet, as in other fevers; and his apartment is to be fumigated with aromatics, such as

sandal-wood, myrtles, and roses. When the belly is constipated, he directs barley-water with manna, prunes, and the like; or, if loose, barley-water with myrtle seeds, gum Arabic, Armenian, or Cretan earth (chalk?). He forbids purgatives after the seventh day, especially in rubeola, as there is danger of diarrhœa or dysentery being superinduced; and, if these affections should come on, he directs them to be stopped with astringents. He recommends particular attention to the eyes at the commencement, and with this intention directs them to be bathed with an astringent decoction. No animal food is to be allowed until the eruption and heat are gone. COMM.

BOOK THIRD.

SECT. I.—ON AFFECTIONS OF THE HAIR, ALOPECIA, OPHIASIS, AND BALDNESS.

As some plants die from dryness for want of sap, and some from the sap being unsuitable to them, so it happens, in like manner, with the hairs; for baldness is occasioned by want of the natural juices, and alopecia and ophiasis by the badness of them. These complaints differ only in figure; for, in the latter, the affected part has the appearance of a serpent; and alopecia derives its appellation from the circumstance of foxes being frequently subject to the affection. Judging of the prevailing humour, then, from the colour of the skin, we are first to evacuate it by purging, and then to have recourse to local applications. If, therefore, the colour incline to black or white, we purge with the medicine called hiera, which evacuates both phlegm and the melancholic humour; but if it is palish, we give pills of aloes. An account of these medicines will be found in that part of our work which treats of Compound Medicines. After general depletion, we are to use masticatories composed of vinegar, mustard, and honey, and not once only, but frequently. It will be better, too, if marjoram, pennyroyal, thyme, or hyssop be infused in the vinegar. In all the other complaints of the head, the same method is to be observed, first evacuating the prevailing humour, either by purging, or by phlebotomy if there be also a fulness of blood, and then proceeding to the topical treatment.

On alopecia. Having first cleansed the part with nitre (*soda*), and scrubbed it with a rough cloth, more particularly a woollen cloth, and continued the friction until it become red, anoint it with vervain pounded with vinegar in the sun. Or, rub in the roughest alcyonium burnt and pounded with lamp-oil. Or,

burn the root of the club-rush, or the rind of the bitter almond, and rub them in with oil or bears' grease. These are moderate remedies. But stronger applications may be prepared from euphorbium, thapsia, and adarce, pounded with oil of bays, or liquid pitch.—*Another:* Having burnt the shells of sea-urchins, mix them with bears' grease, and anoint with them, having first cleansed the part with nitre.—*Another:* Of pepper, of dried sheep's dung, of hedge mustard, of rocket seeds, of each dr. iv; of white hellebore, dr. iij; of mouse-dung, dr. j: add to the gall of a bull, of a goat, or of a hog.—*Another tried remedy for alopecia:* Of the root of mandragora, of birthwort, of the root of wake-robin, of wax, of liquid pitch, oz. viij; of swine's seam not salted, of the heart or inner part of the herb nerium a little: boil the seam and the nerium until the herb be softened; then strain and throw away the herb, and add to the axunge the other ingredients, and boil. Add the wax and the liquid pitch, and use boldly in the sun. When the ulcers are cicatrized, burn the head of a fox, take alcyonium, the leaves of the black alkanet, and, having pounded all together, sprinkle upon the ointment, in order to promote the growth of the hair.—*Another:* Of a mouse's head burnt, one part; of the shells of the sea-urchin, one part; boil in a pot with swine's seam, and use. They may also be sprinkled in powder.

A medicament from Thapsia, for all chronic affections. Of euphorbium, of thapsia, of bay-berries, of each, oz. j; of native sulphur, oz. ss.; of hellebore, oz. ss; of wax, oz. viij; of oil of bays, or old castor oil, q. s. When stronger applications are required, add of cardamom, oz. j; of burnt alcyonium, oz. j; and it will be applicable not only for alopecia, but for all cases of chronic coldness. But in every case of alopecia have recourse in the first place to the process of cleansing with nitre, then friction, and frequent shaving. I have seen many have their hair reproduced by friction alone, and frequent shaving.

For baldness, and to promote the growth of the hair, from Crito. Take the dried stomachs of five hares, roast carefully in an earthen vessel, add to them the third part of myrtle tops, of the fruit of acacia, of the juice of acacia, of sweetbriar, an equal part, of maiden hair, oz. iij; pound all these things together, and sift through a small sieve. Then adding of bears' grease, lb. iv, of that of a seal the same quantity, pound and

preserve in a leaden vessel. At the time of using add to any fragrant ointment.

Preservatives of the hair. Of maiden-hair, one part; of ladanum, two parts; add to wine and myrtle oil, and use.—*Another:* Pound the flower of anemone, and rub it in with oil. The same will blacken the hair.—*Another:* Pound the straight vervain dried with its roots, sift through a narrow sieve, and, having mixed with oil, so as to have the thickness of the bath-sordes, lay it up in a copper vessel, and, when softened, use instead of oil in like manner.

A watery infusion for increasing the growth of the hairs, and for blackening them. Of rain water, six sextarii; of Alexandrian sumach, three sextarii; of maiden-hair, oz. iv; of savin, oz. iv; of ladanum, oz. j; of dried gourd, oz. j; of myrtle, oz. j; allow to macerate in a glass vessel for twenty days, stirring it twice a day with a pine spatula. On the following day plunge the comb into the infusion, and use once a day. And the seed of marsh-mallows, when rubbed in while in a bath, preserves the hair and promotes its growth. And, in like manner, oil may be rubbed in that has had the seed of marsh-mallows boiled in it, or added to it.

For thinning the hair. Of the leaves of the fig-tree, of the rind of the white wild vine, of pumice-stone, of the shells of buccinæ, of Cimolian earth, of each one mina. Put them into a new crude pot, and having covered it with clay, burn in a furnace, and pound, adding of aphronitrum half a mina, of the galls called omphacitæ thirty in number, pulverize and use.—*Another:* Of aphronitrum, half a mina; of roasted pumice-stone, four minæ; of fissile alum (*alumen scissile*), of dried iris, of the black wild myrtle, of gum, of the root of bryony, of each dr. iv; of unripe lupines pounded, the fourth part of a gallon; use without tallow.

For falling out of the hair. Rub in aloes, with black austere wine; or, the cover of the purpura boiled with oil; or, myrrh and ladanum, with wine and myrtle oil; or, pound burnt sheep's dung on a shell, and rub it in with oil, having first shaved the head.

COMMENTARY. See Galen (de Med. sec. Loc. i, Parat. Facil., and Meth. Med. xiv, 18); Celsus (vi, 4); Aëtius (vi, 65); COMM.

COMM. Alexander (1); Pliny (H. N. xxviii, 46); Octavius Horatianus (i, 7); Marcellus (de Med.); Isidorus (Orig. iv, 8); Oribasius (Synops. viii, 22, and Meth. Med. iv, 5); Nonnus (8); Heliodorus (ap. Nicetam); Incertus auctor. (Frag. ap. Moschionem in Gynæc. 21); Pollux (Onomast.); Myrepsus (38); Actuarius (Meth. Med. ii, 5); Psellus (op. Med.); Serapion (i, 1); Mesue (ii, 1); Avicenna (iv, 7, 1); Avenzoar (i, 1, 3); Haly Abbas (Theor. viii, 8, Pract. iv, 12); Alsaharavius (Pract. i, 2); Rhases (ad Mansor. vi, 1, Contin. xxxvi.) See also Callimachus (Hymn. ad Dianam, l. 79); with the learned Notes of Tytler and Spanheim.

Our author copies closely from Galen, who explains at considerable length his principles of treatment; which consists of purging with warm cathartics, shaving the part frequently, rubbing it, and using calefacient applications. He says that the disease is occasioned either by the deficiency or depravity of the nutritive juices. Drs. Willan and Bateman describe this complaint by the name of porrigo decalvans. Bateman justly remarks, that, "all that can be prescribed respecting the treatment of this affection has been expressed by Celsus with his usual terseness: "Quidam hæc genera arearum scalpello exasperant; quidam illinunt adurentia ex oleo, maximèque chartam combustam; quidam resinam terebinthinam cum thapsia inducunt. Sed nihil melius est quam novaculâ quotidie radere, quia, cum paulatim summa pellicula excisa est, adaperiuntur pilorum radiculæ. Neque ante oportet desistere, quam frequentem pilum nasci apparuerit. Id autem quod subinde raditur, illini atramento sutorio satis est."

The modes of treatment recommended by the other authorities are in principle the same as our author's and that of Celsus. Octavius Horatianus, after directing pills containing colocynth, aloes, scammony, and wormwood, recommends nearly the same external treatment as Celsus: "Omnes confectiones quæ mediocriter calefacere possunt, mediocribus et delicatioribus corporibus adhibendæ sunt. Prius ergo loca linteolo usque ad ruborem ante curam confricentur mediocriter, ne vulnerentur. Quæ si vulnerabuntur, oleo roseo, vel adipibus anserinis recuranda sunt."

Dioscorides recommends tar-water and other preparations of pitch for alopecia.

In a Fragment of an anonymous author, published along with 'Moschion' in the 'Gynæcia,' very sensible rules of treat-

ment are given; namely, to shave the part frequently, to rub it with compositions containing mustard, adarce, wormwood, alcyonium, &c., and to purge with aloes, scammony, colocynth, and the like. Similar directions are given by Heliodorus. Even Alexander, who in general controverts freely the opinions of Galen, does not differ from him at all in this case. He lays down the treatment of baldness very systematically, according as the falling off of the hairs arises from preternatural dryness of the part, or from contraction or expansion of the pores, or whether it proceed from the purging of the system from depraved humours. In the first of these cases he recommends baths, and a moistening diet, but forbids the use of astringent applications. For preternatural openness or relaxation of the pores he recommends applications of an astringent and bracing nature, and strongly nourishing food. For preternatural contraction of the pores he advises the opposite class of remedies. When the hairs fall out owing to the cleansing of the system from depraved humours, as happens after diseases, he cautions against a too meddlesome interference with the process of nature. Aëtius and Oribasius are the servile copyists of Galen. Marcellus gives a long list of compound medicines for the cure of alopecia. Pliny recommends bull's gall with Egyptian nitre. The ancients were in the practice of using nitre for cleaning linen, as is remarked by Bernard (ad Nonnum, u. s.) On the ancient practice of scrubbing the head with nitre or soda, see Salmasius (ad Tertull. de Pallio, 432.) COMM.

The Pseudo-Dioscorides recommends shaving, rubbing with nitre, and stimulant applications containing arsenic. (Euporist.)

The Arabians treat the disease exactly as the Greeks. Avenzoar recommends purging, a regulated diet, and friction with oil of nuts and cherva. Haly Abbas approves of general evacuants, friction, and stimulant applications containing cantharides, nitre, &c. Alsaharavius recommends emetics after food, purging with hiera picra, friction with compositions containing mustard, euphorbium, pellitory, nettle-seed, with oil of sesame, or with liquid pitch. Ophiasis, he says, is to be treated upon the same principles. Among the ingredients of Mesue's compositions, we remark cantharides, musk, and amber. Serapion, like Galen and some of the others, makes mention of red arsenic as an ingredient in these applications. Rhases, in his 'Continens,'

COMM. collects the opinions of all preceding authorities on the nature and treatment of these diseases. Most of the local applications recommended by them are stimulants and rubefacients, such as mastich, euphorbium, cantharides, ladanum, St. John's-wort, &c. which are to be rubbed in with oil or pitch. He mentions that the celebrated Antyllus recommended scarifications, cupping, and leeching. Servitor directs a depilatory, prepared by mixing two parts of quicklime with one of arsenic in a crucible or mortar, and adding a little water to them. Pliny, Samonicus, Marcellus Empericus, and other ancient authorities speak highly of bears' grease for the cure of baldness.

For the cure of ophiasis the earlier modern surgeons recommended depilatories containing arsenic, quicklime, vitriol, hellebore, and the like. One described by Rolandus consists of quicklime and arsenic boiled in water. (i, 14.) A similar one is described by Plempius.

SECT. II.—FOR MAKING THE HAIR CURLED, AND FOR DYEING IT. FROM CLEOPATRA.

Having first scrubbed the head, anoint the hair with the root of cow-parsnip in undiluted wine.—*Another:* Having shaved the head, and scrubbed it, take a young pine kernel, and burn it until it be reduced to ashes, put it into a mortar and pulverize it, adding myrtle ointment, until it be of the thickness of honey, and thus anoint the head with it.—*Another:* Rub in equal parts of myrtles and beet, with oil.—*Another:* Twenty galls; of maiden-hair, oz. ij; pound with sea-water until they attain the thickness of honey. Having rubbed the hair with urine, or lixivial ashes, and cleaned it with warm water, anoint it with this medicine for two days, then stopping, on the third day clean it, and, having shaved, anoint with myrtle oil. This will render the hair smooth, and curled, and black; but it will be more curled if you shave before using it.

Preservatives of hoary hairs, and other compositions for dyeing them black. Of the oil of unripe olives, three sextarii; of spikenard, dr. j; of unguis aromaticus (sweet-hoof?), dr. iv; of schænanth, dr. iv. Boil with oil, and separately pound and dissolve carefully one ounce of the juice of acacia in wine.

When only a third part of the oil remains, strain it, and mixing with the acacia, lay it up in a vessel, and anoint with it every day.—*Another:* Of the bark of green walnuts, oz. iij; of the root of the ilex, oz. iij; of dark-coloured wine, three sextarii; boil to a third part, and, having strained, pound the remainder with one sextarius of myrtle oil. To be used every day.

An infusion for dyeing the hair black. Of galls, one sextarius, of elm-leaved sumach (*rhus coriaria*), two sextarii; of the leaves of privet, an equal quantity; of black myrtle leaves, the same; of cinnaris a handful; of poppy-heads the same; of lake water, twelve sextarii. Macerate for many days, boil to a third, then rub and anoint the head. When the hairs are dry anoint with an acetabulum of Cimolian earth, and an equal quantity of quicklime. Dissolving these things in the juice of boiled beet, anoint with it, and then, for the sake of protection, put over it the leaves of beet, and, when they adhere properly, wash in the bath with it.

For dyeing tawny hairs, and making them of a bright yellow colour. Take of myrrh, one part; of the flower of salt, one part; pulverize carefully, and, having made it of the thickness of the sordes of a bath, scrub the head, anoint it with the ointment, and allow it to remain a night and a day, and then order it to be wiped off.—*Another:* Rub in unripe lupines with water. —*Another:* Of litharge, dr. j; of Cretan earth, dr. iv; of quicklime, dr. j; with water make to the thickness of bath sordes, and anoint. Apply the leaves of beet for two or three days, and then clean.

For making black hairs yellow. Add the lees of wine to the sordes of a bath, and, having made it to the consistence of cerate, use it when you are going to sleep, and in the morning the hairs will be yellow.—*Another:* Macerate the leaves of privet in the juice of Fuller's herb (*struthium*), and use the infusion.

A gold-coloured dye. Of alum, dr. vj; of red arsenic, dr. vj; of saffron, dr. ij; of the thapsus used by dyers, called *herba rubia* by the Romans, dr. viij; of the lixivial ashes used by the bonnet-makers, four sextarii; boil the ashes and the thapsus pounded together, and, when but one half remains, squeeze out the juice, and dissolve in it the alum, red arsenic, and saffron; put it into a glass vessel, and, at the time of using, first scrub the head, and then anoint with it. When it is all drunk up, clean with

the decoction of fenugreek, barley, and cumin, having previously washed them with a sufficiency of tepid water, and add as much soap as is required.—*Another:* Mixing together the burnt lees of wine and the oil used in the baths, anoint the hairs.—*Another:* Scrub with Gallic soap and water at each bath.—*Another very fine:* Of red sumach, one sextarius; of galls, lb. iss; of sheep's dung, oz. ij; of the golden-coloured herb, called *rubia* by the Romans, oz. ij; of maiden-hair, two bunches (*fasciculi*); of wormwood, one bunch; of lupines stripped of their outer coat, two cyathi; of water, six sextarii; put all into a glass vessel, and allow to macerate for nine days, stirring it twice a day. At the time of using, strain out what is required, and, soaking a sponge in it, rub the hairs, and when they are moistened allow them to drink it up. When dried, wash with a solution of soap in warm water.

For making the hairs white. Burn the flowers of the white petty-mullein, moisten with vinegar, and mix for a detergent ointment.—*Another:* Of the fruit of petty-mullein, dr. j; of alum, dr. j; of the rind of radishes, dr. j; pound, and mix of bull's glue, dr. iv.

COMM. COMMENTARY. Galen, when about to treat of compositions for the hair, remarks that the application of these does not belong properly to the physician, but that he may sometimes be obliged to furnish them to *royal ladies*, whom, under certain circumstances, he cannot venture to disobey. That the ladies, in ancient times, were in the practice of painting their hair, is evident from Achilles Tatius (ii, 149), and Juvenal (vi, 354.) Eustathius mentions that antimony was very much used for painting the eyebrows black. (Comment. in Iliad, viii, *versus finem.*)

For further information upon this subject, with which we must confess ourselves wholly unacquainted, we refer the reader to the following works: Alexander (i, 3); Oribasius (iv, 7, 8); Aëtius (vi, 58); Nonnus (2, 3); Octavius Horatianus (i, 1); Avicenna (iv, 7, 1); Alsaharavius (Pract. xvii, 7); Rhases (ad Mansor. v, and Contin. xxxvi.) Vegetius, the great authority on Veterinary Surgery, gives prescriptions for dyeing the hair of cattle. (Mulom. ii.)

The thapsus mentioned in this Section occurs in Theocritus

(Idyl. ii, 88,) and is said by the scholiast to be a Scythian wood for dyeing the hair. It also occurs in Nicander (Ther. l, 529). His metaphrasist, Eutecnius, says that it grows in Sicily. Lucan, in like manner, calls it *Erycina thapsus*, i. e. Sicilian thapsus. (Pharsal. ix, 916.) It is impossible to determine exactly what tree it was. COMM.

The opinions of the philosophers regarding the hair may be learned from Aristotle (H. A. iii), and Pliny (H. N. xi, 94.) Both state that the hair and also the nails grow after death; and Philoponus mentions this circumstance as a well-known fact. See Comment. in Aristot. de Anima, Præfat. It may be proper to mention that Bichat and other modern physiologists have been of the same opinion.

SECT. III.—ON PITYRIASIS.

Pityriasis is an eruption of small furfuraceous substances on the skin of the head, or the rest of the body, without ulceration. It is occasioned, either by depraved humours which have been determined to the head, or by a saltish phlegm, or by bilious or melancholic blood. After the general system has been evacuated, as formerly described, we must use some of the under-mentioned remedies. Having first macerated Cimolian earth in water, mix with the juice of beet, and anoint it, allowing it to remain until dry, then wash it away, and, having pounded frankincense with wine and oil, anoint with them. Next day, rub in stavesacre with oil.—*Another:* Of nitre, of the burnt lees of wine, of ben-nut, of each, lb. j; of stavesacre, lb. iss. Dissolve in wine, and rub the head; or, if the rest of the body be affected with tingling, it may be used dry. When the pityriasis is more humid, wash with brine or the decoction of lupines. Of this remedy I have had ample experience.

On psydracia and exanthemata of the head. The psydracia are small protuberances, like blisters, elevated above the skin. The exanthemata are superficial ulcerations, somewhat red and rough. Both are to be cured by the under-mentioned remedies: Of litharge, dr. iv; of ceruse, dr. iv; of alum dr. ij: of the green leaves of rue, dr. ij; pound with vinegar and myrtle-oil, and anoint.—*Another:* Pounding rue and alum with honey, anoint with this the head, after having first shaved it. If the head is

excoriated, apply olive leaves boiled with honey.—*Another:* Of litharge and ceruse, of each, dr. xij; of native sulphur, dr. viij; mix with myrtle cerate.

For the thick and red ulcers of the head, resembling papulæ, or small nipples, from which ichor is discharged. Having first shaved the head and scrubbed it with water and nitre, use native sulphur livigated with human urine; or anoint with melanteria and vinegar.

For achores and favi. The complaint called achor is one of those which affect the skin of the head, corroding the skin by very small perforations, from which a discharge of viscid humour takes place. The complaint called favus is nearly allied to it in appearance, since it consists of larger perforations resembling the combs of bees, containing a honey-like fluid. They are occasioned by a nitrous and saltish phlegm. In such cases, the diet should consist of wholesome food; and everything that is acrid and saltish should be avoided, more particularly if the attack be inflammatory. After the proper evacuation of the prevailing humour, having shaved the hairs, foment twice, thrice, or oftener, with warm water, in which has been boiled myrtle, bramble, or lentil, or bitter lupines, or the root of asparagus. When the ichorous discharge is greater, apply a cataplasm of the leaves of willow, with water, or of lentil. The ointments used should consist of Cimolian, Cretan, or Samian earth, or pompholyx, or spodium, or litharge, or cadmia, or burnt paper, or the powder from pepper. All these are to be applied with vinegar. We may use the following smegma: Of sulphur, of the herb perdicias, and soap, of each equal parts. The following are compound applications: Of litharge, dr. xvj; of the leaves of rue, dr. viij; of the stavesacre, dr. iv; of copperas, dr. ij; with vinegar and myrtle oil; make to the consistence of bath-sordes, and anoint with it.—*Another:* Of sandyx (*calcined ceruse?*), dr. iv; of myrrh, dr. iv; of native sulphur, dr. ij; of manna, dr. iv; rub into the part with old oil.

For achores. When they discharge ichor, triturate the dross of silver, or yellow ore of lead (*molybdæna*), and sprinkle upon them.—*Another, for achores and humid psora:* Of the roses of the rhododaphne, oz. iv; of native sulphur, oz. iv; of liquid pitch, oz. iij; of dry pitch, oz. iij; of wax, oz. vj; of myrtle oil, q. s. For children, dissolve in milk, and anoint.

For fici. We give the name of fici to ulcerous excrescences which are round, somewhat hard, red, and accompanied with pain. They arise for the most part on the head, but also sometimes on the other parts of the body. The best application for this complaint consists of fissile alum, of the calcined flowers of copper, of taurocolla, of each equal parts, with double the quantity of the flakes of copper; triturate with vinegar, and anoint. A proper application is also prepared from the burnt heads of the cackrel fish, the bulbi boiled, and their ashes mixed with vinegar.

A dry application for ficose eruptions of the head and chin. Of misy, dr. iss; of chalcitis, dr. iiss; of squama æris, dr. j; of fissile alum, dr. j. Having washed, apply this powder in a dry state unsparingly, and allow it to remain. Next day, having again washed, wipe the part with a sponge, and apply it again. A thick scab will then fall from the ulcer. Repeat the same application the following days. The cure will be effected in a few days without leaving a cicatrix; but this medicine operates strongly.

For lice in the head. Direct the head to be scrubbed with the decoction of lupines; or pound together staves acre and sandarach, and rub them in along with oil or vinegar; or a small quantity of pepper may be added to old oil, so as not to occasion ulceration; or the juice of ivy with honey may be used; or mustard and vinegar; or the gum vernix, or liquid pitch with alum; or the expressed juice of the bay berries; or oil of radishes. I have always succeeded by pounding staves acre with vinegar and oil, and anointing with this.

COMMENTARY. Drs. Willan and Bateman agree with all the best medical writers of antiquity in describing, by the name of *pityriasis,* a disease consisting of slight, scaly, and branny exfoliations without ulceration. See Galen (Sec. Loc. i); Alexander (i, 3); Oribasius (Synops. vi, 25); Aëtius (vi, 66); Actuarius (de Sig. Morb. ii, 5); Nonnus (4.) Actuarius, who gives a very distinct account of the disease, states in strong terms the danger of repressing the cutaneous eruption. (l. c.) COMM.

It is the *porrigo sicca* of Celsus (vi, 2), who recommends for it shaving the head, and using slightly repressing applications, "quale est nitrum cum aceto, vel ladanum cum myrteo et vino,

COMM. vel myrobalanum cum vino." Marcellus distinguishes the pityriasis from porrigo. (De Med. 4.)

The Arabians, especially Serapion, direct very active general treatment, such as venesection, masticatories, cathartics, and the like. (i, 4.) It is described under the name of *furfures capitis* by the translator of Haly Abbas. (Theor. viii, 18.) Like the Greeks, he represents it as consisting of small furfuraceous scales without ulceration. Alsaharavius uses the same name, and recommends bleeding, cupping, purging, and external applications of a detergent nature, such as flour of vetches, with vinegar and the like. Avenzoar recommends pills of drastic purgatives, and the ordinary lotions. (i, 1, 10.) See also Avicenna (iv, 7, 1, 24); and Rhases (ad Mansor. v, 1; Contin. xxxvi.) In the 'Continens,' the disease is described by the names of furfures and impetigo, for which Rhases recommends liniments containing nitre, sulphur, hellebore, vinegar, &c.

Willan and Bateman describe the *psydracia* as being small pustules irregularly circumscribed and terminating in a laminated scab. Most of the above-mentioned writers treat of them in the same terms as our author. They seem to be the *balchie* of Avicenna (iv, 7, 6, 1) who calls them a malignant species of achor. See Galen (l. c.)

Galen, Alexander, Aëtius, and our author describe the *exanthemata* as being small superficial ulcerations. Drs. Willan and Bateman use it as a generic term for rashes. The exanthemata seem to be the *alraba* or *pustulæ dulces* of Alsaharavius (i, 10.) See Book First, Sect. VI, and Book Fourth, Sect. VIII, of this Work.

Willan and Bateman apply the terms *achor* and *favus* in the same sense as Paulus and the other ancient authors. Octavius Horatianus uses the terms acora and cerio. He says, "Acoræ et ceriones distant, quod ceriones plures cavernas egestionis habent et humorem multo pinguiorem emittunt; acora autem unam cavernam habet, et humorem egerit aquatiorem." (i, 5.) Galen has treated of these complaints very fully, and his applications are similar to those of our author. See also most of the authorities on pityriasis. The favus is the first species of *tinea* described by Haly Abbas. It consists, he says, of cells, and discharges a fluid-like honey. The achor is his *amada*, or third species of *tinea*, consisting of smaller cells than the former. Alsaharavius

describes the favus by the name of *alsahara*. It contains, he says, a viscid fluid like honey. He recommends for it purgatives, and detergent applications containing nitre, lees of wine, &c. (Pract. i, 9.) The achor is called *alsahafa* by him. The description which Actuarius gives of papulæ, favus, and ficus is sufficiently distinct, but not different from our author's. (De Diagnos. ii, 5.) Comm.

The other authorities gives the same account of *ficus* as Paulus. It is Haly Abbas' second species of *tinea*, and is described by him as consisting of hard round protuberances. Haly's fourth species of *tinea* consists of small ulcers of a mammiform appearance. They are mentioned by our author. Fabricius ab Aquapendente defines the ficus thus: "Tumeur qui est rouge, ronde, quelque peu dure, et de laquelle (etant ulcérée et pressée) sort une matière sanieuse, semblable aux grains de figues." (Œuv. Chir. i, 1, 13.) He says that Hippocrates and Galen give a different account of it from our author's; but we can see very little difference between them. Most of the ancient authors recommend the same remedies for ficus as Paulus. The most active of these are staves acre, and sandarach or red sulphuret of arsenic. They do not appear to have apprehended danger from the free use of arsenic in this way. Galen recommends equal parts of white hellebore, staves acre, and nitre with oil. (De Med. Sec. Loc. i.) Octavius Horatianus mentions equal parts of pellitory and galls. The same medicines are recommended by Serapion, (i, 5.) See also Oribasius (de Loc. Affect. iv, 11); Celsus (xi, 3); Cælius Aurelianus (de Morb. Tard. iv, 2.) Haly's remedies consist of galls, litharge, mercury *killed* (sublimed?), sulphur, and so forth. Among those of Rhases we remark squills, assafœtida, quicklime, mercury, &c. However, he prefers excision. (Continens. xxxvi).

For pediculi in the head, the Arabians recommend nearly the same compositions as our author. They contain arsenic, staves acre, hellebore, nitre, and the like. See Alsaharavius (Pract. i, 16), and Rhases (Cont. xxxvi, 6.) Among the ingredients mentioned by the latter, we remark quicksilver, sulphur, red arsenic, mustard, staves acre, the oil of oleander, vinegar, &c. These medicines form the ingredients in the compositions recommended by modern writers on this complaint. See Plempius (de Morbis Pilorum), and Amatus Lusitanus (Curat. 58.)

SECT. IV.—ON HEADACH.

Headach, which is one of the most serious complaints, is sometimes occasioned by an intemperament solely; sometimes by a redundance of humours, and sometimes by both; and sometimes it is occasioned by a procatarctic cause, such as external heat, or cold, or drunkenness, or a blow. The most vehement pains of the head are excited by the active qualities, particularly heat. Those occasioned by dryness are not equally vehement; but a humid quality excites no pain of itself, unless it happens to be joined to heat, cold, or a fulness of humours. Headachs occurring in a fever having been treated of in the preceding Book on Fevers, we will now treat of the others.

On headach from heat. When headach proceeds from exposure to heat, the skin feels hotter and drier than natural at the first application of the hand, and the eyes of such persons are red. They delight in cold affusions and ointments, and are benefited by them. The method of cure will correspond with that described as applicable for cases of headach in fevers. When the pain becomes chronic, we must have recourse to some of the under-mentioned applications. The following applications to the forehead and temples will also be proper, namely, bread soaked in oxycrate and rose-oil, to which may sometimes be joined almonds; or roses either dried or fresh, or mixed with mint and pennyroyal; or bread with the leaves of the peach tree. Benefit may also be derived from basil, pounded with vinegar and rose-oil; or from ivy berries boiled in vinegar, and pounded with rose-oil; or from wheaten flour mixed with the watery decoction of wild thyme; or from cardamom toasted and triturated in vinegar and rose-oil; or from leaven with rose-oil; or from dried iris with vinegar. These applications must be changed frequently; for if allowed to remain long, they have no effect.

Trochisks for headach connected with a warm intemperament. Of saffron, dr. v; of copperas, dr. x; of alum, dr. xvj; of myrrh, dr. vij; of the oil of unripe olives, dr. iij; of chalcitis, dr. iij; of gum, dr. iij; of austere wine, *q. s.* Use with oxycrate, and, if watchfulness accompany it, add some of the soporifics.

On headachs from a cold intemperament. In cases of headachs from coldness, the symptoms are just the reverse of those proceeding from heat; for the face is pale and not contracted, and the patients do not delight in cold things, nor are benefited by them. The diagnosis will also be confirmed by adverting to their diet, and the like. The ointments applied should contain rue, or the oil of bay, or of iris, or of nard, or the juice of balsam, more particularly if the excrementitious humours be thick and viscid. This must be rubbed into the forehead, and likewise preparations containing pepper and euphorbium. Also give thin wines and recommend exercise, hot baths, and occasionally an emetic from radishes. When the exciting cause is a chronic quality without plethora, use the following application: Of white pepper, dr. ij; of crocomagma, dr. ij; of fresh euphorbium, dr. viiiss; of pigeon's dung, dr. iss; of the strongest vinegar, *q. s.* Having first rubbed the affected part, anoint with this.

On headachs from a bilious humour. The symptoms resemble those occasioned by heat, only there are more gnawing pains at the stomach, paleness of the countenance, and sometimes a bitter taste in the mouth. This affection occurs most frequently in adults who are of a hot temperament, lead an anxious life, and are subject to collections of yellow bile. They must use tepid baths, and mild ointments, with a watery drink; and their whole diet should be moistening, and consist of good juices. The bilious humours must be evacuated with the decoction of wormwood, or with aloes, or the antidote called hiera picra, either alone, or in combination with a little scammony, or the aloetic pills. The forehead is to be rubbed with the saffron trochisk, or with that called trigonos, or the like.

On headach from sympathy. If the head be affected sympathetically with the general system, this must be our first care, by attending to the intemperament and the prevailing matter. If it proceed from plethora, more especially a venous one, we will bleed; but, if it be only an offending quality, we will use a purgative medicine. If the head sympathise with some particular part, such as the liver, belly, or stomach, we must apply remedies to these organs. If a hot intemperament accompany, we give bread which has been steeped in a watery wine, or spoon-meats from chondrus. Moderately cooling and tonic

applications are likewise to be used externally, as formerly described. But if the headach be occasioned by viscid and thick humours contained in the stomach, these must be dislodged by drinking oxymel, either alone or that preparation called the Julian. We must also use decoctions of hyssop and marjoram, and other things still hotter and more incisive, and likewise the emetic from radishes, hot embrocations, and cataplasms.

On headach from wine. If the wine remain undigested, we must procure vomiting, by drinking tepid water; but if the headach remain after digestion, we must use cooling and repellent applications, such as rose-oil alone and with vinegar, or the juice of ivy, or of cabbage. And the leaves of cabbage infused in warm water, and applied to and bound to the head, naturally counteract intoxication. They must also eat boiled cabbage. Dried lentil is also beneficial, particularly to those who have a loose belly. They ought likewise to eat alica, pomegranates, apples and pears, and drink water.

On headach from a blow. We must immediately bleed those who have headach from a blow (unless the injury be superficial), and use suitable embrocations to the head; bathe it with sweet oil; cover it with wool; and make the patients abstain from wine and a rich diet, more especially if they have fever; and, upon the whole, we are to accommodate our treatment as for the inflammation of nervous parts, and especially of the membranes of the brain. If there be a wound it must be treated accordingly.

An emollient application for headach. Of wax, dr. vij; of almond-oil, oz. iij; of turpentine, dr. viij; of scraped verdigris, of Cimolian earth, and of chalcitis, of each, dr. iv; of pumice-stone, dr. iij; of burnt copper and scales of steel (*squamæ stomomatis*), of each dr. ij; and, if appear to be too hard, soften it with almond-oil.

COMM. COMMENTARY. By cephalalgia, as Aretæus remarks, is to be understood an acute pain of the head, and by cephalæa a chronic one. Our author does little more than abridge the contents of the second book of Galen's work 'De Med. sec. Loc.', where this subject is treated of with unrivalled precision. See also Aretæus (de Morb. Chron. i, 2); Oribasius (de Loc. Affect. iv, 1); Celsus (iv, 2);

Cælius Aurelianus (de Morb. Chron. i, 1); Octavius Horatianus, ii, 1); Alexander (i, 10); Pseudo-Dioscorides (Euporist. i, 6); Actuarius (Meth. Med. vi, 2); Aëtius (vi, 40); Leo (Synops. ii, 1); Nonnus (10); Serapion (i, 6); Avicenna (iii, 1, 2); Avenzoar (i, 3); Mesue (de Ægr. Capitis, ii, 1); Haly Abbas (Theor. ix, 3, Pract. v); Alsaharavius (Pract. i, 2, 1); Rhases (ad Mansor. ix, 1, Contin. i, 21.) COMM.

In headach from heat, Galen and Alexander concur in condemning the use of poppies, hemlock, and mandragora, unless when compelled to have recourse to them by the continued watchfulness of the patient. Galen directs the application of snow to the head. Avenzoar recommends the affusion of cold liquids from a height upon the head. Serapion mentions oil cooled with ice. When the pain is obstinate, Rhases approves of opening the temporal artery. When the pain is violent, the author of the 'Euporista' recommends us to shave the head and bathe it with a decoction of narcotic vegetables. Galen expresses himself very clearly with regard to the sympathy between the head and the stomach, from nervous communication. (Loc. affect. iii, 9.)

For headachs arising from a hot or cold intemperament, Galen recommends the remedies called metasyncritica by the Methodists, for an account of which see Le Clerc. (Hist. de la Méd. ii, iv, 1, 3.) He says, "Ce que Thessalus appelloit metasyncrise etoit un changement qu' il prétendoit faire dans tout le corps, ou dans quelque partie seulement." Such rubefacients as mustard, thapsia, &c. belonged to this class. See also Prosper Alpinus (de Med. Method. iii, 15.) The term signifies "altering the system;" and, therefore, we have generally rendered it "alteratives" in the course of this translation. The treatment followed by Philagrius in the hot and fiery intemperament of the head deserves to be noticed. In a case of this description having used many other cooling remedies in vain, he says he shaved the head and applied snow to it, by which means he extinguished the intemperament. (Theophilus, Sch. in Hipp. t. ii, 457, ed. Dietz.) This practice is borrowed from Galen, as above.

Our author borrows his treatment of bilious headach from Galen and Alexander. To his judicious account of headach from wine or a blow, nothing need be added from any other

COMM. author. Alexander justly remarks that, when it arises from the latter cause, it is very dangerous. He is fuller than our author in treating of headach from sympathy with the liver, for which he recommends local applications of a cooling nature and a generous diet. Similar treatment, he adds, is to be pursued when it arises from a hot intemperament of the stomach, bowels, or spleen.

According to Avicenna and Actuarius, frothy urine, that is to say, urine having bubbles on the surface, is characteristic of cephalalgia.

The Arabians generally treat of the disease by the name of *soda*.

Headach, says Haly Abbas, is either seated in the head, or arises from sympathy. When seated in the head, it either arises from an intemperament, or organic disease, or flatus, or a blow. One of the most common causes of sympathetic headach is the presence of bilious matters in the stomach, which case is generally relieved by vomiting. Protracted watchfulness induces headach, by occasioning a corruption of the food in the stomach; and protracted sleep in like manner fills the brain with vapours. Excessive evacuation, by producing a dry intemperament, proves a cause of headach. It is in this manner that epistaxis and menorrhagia occasion headach. Haly Abbas, like Galen, mentions as a cause of headach an excessive sensibility of the nerves which connect the brain and stomach. Haly further states that headach will arise from sympathy with the uterus, as after abortions, obstructions of the lochial or menstrual discharge, and the like causes. He remarks that violent headach will sometimes occasion loss of speech, owing to an affection of the nerve which is distributed upon the muscles of speech. His treatment, like our author's, is varied according to the nature of the exciting causes; and his account of it is so full and judicious, that we regret our limits do not permit us to give a more ample detail of it. His remedies are, general bleeding, cupping the extremities or back part of the neck, anodyne or cold applications to the head, drastic or gentle purgatives, and so forth.

Alsaharavius treats the complaint upon similar principles. When it arises from heat, he recommends the affusion of tepid water over the head, and afterwards applies oils cooled in snow.

When connected with bile, he directs the belly to be opened. COMM. When it is occasioned by a sanguineous plethora, he recommends general bleeding and the application of cupping-instruments to the nape of the neck.

Rhases, as usual, treats fully of *soda* and all its varieties. When of an inflammatory nature, he recommends bleeding, purging, and the application of vinegar and rose-oil to the head. When connected with bile, he directs first vomiting by drinking tepid water, and then to take purgatives, and afterwards wormwood. When the disease is protracted, he approves of opening the temporal vessels, and of using sternutatories. When it arises from a blow, he recommends bleeding, and purging with colocynth, &c. He states that Ruffus recommended the affusion of cold water, or of oils congealed in snow, over the head. In obstinate cases, he directs the use of the actual cautery.

SECT. V.—ON CEPHALÆA AND HEMICRANIA.

Each of these affections is a permanent pain of the head, liable to be increased by noises, cries, a brilliant light, drinking of wine, and strong-smelling things which fill the head. Some feel as if the whole head were struck, and some as if one half, in which case the complaint is called hemicrania. When the affection is seated within the skull, the pain extends to the roots of the eyes, and when externally it spreads around the skull. Pain then, accompanied with heaviness, indicates plethora; if with pungency, acrimony of the humours or spirits; if with throbbing, inflammation; if with tightness and without heaviness and throbbing, a fulness of a thin and flatulent spirit (*gas?*); but if it be attended with throbbing, it is indicative of inflammation of a membrane; if with heaviness, of a fulness contained within the membrane. If the putrid humour acquire heat, the headach will be attended with fever; and, in general, those in whom headach proceeds from inflammation have fever. When, therefore, the whole body is in a plethoric state, we must bleed (attention being paid to the strength), and use the more acrid clysters. Should there still appear to be a fulness of blood, we must open the veins of the nose, and endeavour to evacuate

thereby to a sufficient amount. We must then give hiera sharpened with vinegar, and use masticatories, or medicines for evacuating the phlegm by the mouth; also procure evacuations from the nose by means of errhines, such as the juice of elaterium, which may be poured in with milk; or the elaterium may be snuffed up dry, or else the juice of sow-bread or of leeks. The following are compound medicines:

An errhine for chronic headachs, ophthalmy, and epilepsy. Of gith (*nigella sativa*), dr. viij; of sal ammoniac, dr. iv; of elaterium, dr. iv; pound and mix with Sicyonian oil, or that of iris, or of privet, so as to have the thickness of cerate, and apply to the nostrils.

An errhine to be snuffed up. Of dried sow bread, dr. viij.; of red nitre, dr iv; or if, instead of the nitre, you will use elaterium, it will be still better. Snuff it through a reed. In more chronic cases use epithemes to the head and unguents, as the following:

An epitheme for cephalæa. Of the ointment of iris, of hog's fennel and castor, of each, dr. j; of bay-berries, dr. ij; of the tops of rue, dr. iv; mix with rose-cerate, and having shaved the head, apply to the whole of it. A certain woman, by using the following application in cases of hemicrania, acquired wonderful celebrity: Having cut down the green root of the wild cucumber into small pieces, she boiled it and wormwood in oil and water until they were softened; and with the warm oil and water she fomented moderately the affected part; and, pounding the root and the wormwood, she made a cataplasm of them. And with this application she cured cases of hemicrania, both with fever and without. When a strong paroxysm takes place, so that the pain is insupportable, use paregoric and alterative applications like the following:

An unguent for cephalæa. Of the juice of hog's fennel, dr. xvj; of the juice of poppy, of anise, of henbane, of saffron, of myrrh, of scammony, of each, dr. ij. Add to vinegar and make trochisks. When using it, anoint those who have pain of the head from thick humours or a flatulent spirit with it, along with vinegar or oxycrate. We must, likewise, use a dropax and sinapism, and the trochisk from thapsia. That, too, from writing ink is much approved of for the same cause, and is to be used, as will be described in the Book on Compound Medicines.

The following one is possessed of wonderful efficacy for hemicrania proceeding from a thick and viscid humour: Of euphorbium, one part; of castor, an equal quantity; mixing with water, insert into the ear of the affected side, and order the patient to go into a bath, and, when he has remained a short time, take it out, and bathe as usual. Thus it is of tried efficacy. It will not be improper also to add them to oil, and inject into the ear. The application described for ischiatics is likewise a successful remedy for chronic headach and hemicrania.

For chronic hemicrania. Of garlic, dr. iv; of wax, dr. ij; of old axunge, dr. ij; of cantharides, dr. ij. Apply this in the evening, and having allowed it to remain all night, break the blister in the morning, and cure with the plaster called panygrus.—*Another:* Of bay-berries, stripped of their skins, dr. ij; of the leaves of rue, dr. ij; of mustard, dr. j; moisten with water, and apply. It is most beneficial to those whose complaints arise from cold causes, so that frequently, when applied before going into the bath, it immediately cures the affection, and after the bath they become perfectly well.—*Another:* Of Sabine oil, lb. j; of wax, oz. iij; of euphorbium, oz. j; with this anoint the half of the forehead, namely, along the temporal muscle. If the cold is not great, pound an equal quantity of galls and crocomagma with wine, and anoint. In cases from hot fumes or humours, do not use the applications with euphorbium.

An apophlegmatism, or masticatory, for cephalæa and hemicrania. Of mustard pulverized and dissolved in vinegar and honey, oz. xiv; of staves-acre, dr. iv; of pellitory, dr. iv; having pounded, strained, and mixed in the sun, gargle with it. When the cephalæa becomes permanent, owing to a bilious humour or some intemperament, use the remedies formerly described for headach. If after all this the pain continue, even after cupping and leeching, and there is reason to suspect that the distribution by the arteries is affected, it will not be improper to open the arteries behind the ears. In those of a humid intemperament the natural baths may be tried with good effect.—*Another, for hemicrania:* Mix euphorbium and earthworms with vinegar, and anoint the affected part, or the whole forehead.

COMMENTARY. Our author's account of cephalæa is mostly abridged from Galen (Sec. Loc. iii), where the treatment is de- COMM.

COMM. tailed at considerable length. Alexander, Aëtius, Oribasius, and the Arabians follow the views of Galen; and, as they are similar to our author's, we need not dwell upon the exposition of them. General and topical bleeding, cooling or stimulant applications to the head, purgatives, masticatories, and errhines, applied according to circumstances, constitute the sum of their treatment. One rule laid down by Oribasius deserves attention; when the pain is acute, he recommends general bleeding; and, when it is protracted, local. When cephalæa is connected with constipation of the bowels, Alexander advises that they should be opened with laxative food and gentle purgatives, such as sal ammoniac (a fossil salt procured from Africa), scammony, and euphorbium. When it is connected with a loose state of the bowels, he recommends such means as will stop it; and when it is produced by insomnolency he recommends things of a paregoric and soporific nature. (i, 11.)

Aretæus, who probably was prior to Galen, delivers an admirable account both of the symptoms and treatment of this complaint. He recommends bleeding at the arm, and by opening the temporal arteries, or those behind the ears, or the vessels of the lining membrane of the nostrils, or cupping the back part of the head; purging with drastic cathartics, such as hellebore; errhines, masticatories, a restricted diet; and, in obstinate cases, he approves of applying the actual cautery to the cranium. (De Curat. Morb. Chron. ii.) Most of the ancient authorities recommend the cautery in this case. (See the notes on Sect. 1 of the Sixth Book.) Aretæus allows a small quantity of a light wine on account of the stomach, which is apt to be affected. (Ibid.)

Cælius Aurelianus has given a most minute account of the doctrines of the Methodists respecting cephalæa. (De Morb. Tar. i, 1.) He enumerates many causes of the disease, among which we may mention too much attention paid to the hair by females. The following is an outline of his practice: Friction of the extremities, emollient fomentations and soft applications to the head, such as wool, or bladders half filled with warm oil, are to be used at the commencement. When the pain is violent, he recommends venesection from the arm opposite the side affected. The head is to be shaven with a razor, and a cataplasm, or a cupping-instrument without scarificators, or leeches, are to be applied; and these are to be followed by sponging

with hot water. If the belly be constipated, we are to give clysters of the oil of rue with honey, or the like. In the decline of the complaint, emollient plasters (malagmata) are to be applied. Gentle gestation before food is particularly recommended, and walking afterwards. Exposure to heat, indigestion, strong drink, hot baths, violent passions, constipation of the belly, and so forth, are to be avoided. His directions respecting diet are extremely minute, but judicious. With regard to topical applications, he recommends after the head is shaven mild ones at first, and afterwards rubefacients and stimulants, and cupping with much heat. Masticatories and gargles are mentioned. He recommends affusion of water, at first hot and afterwards cold. When the disease does not yield to these remedies, he directs a course of hellebore. The methodist oppugns freely the practice of the other sects. Refrigerant applications, containing venegar, rose-oil, and the like, he says, are very prejudicial; purgatives injure the stomach; cauteries excite a dangerous disturbance; the cold bath produces rigidity of the nerves; and hot masticatories do not answer well. Comm.

Scribonius Largus mentions a black torpedo applied alive to the head as a remedy for headach. (De Comp. Med. c. 1.) The same prescription occurs in the collection of Marcellus Empiricus. See further Galen (de Simpl. Med. facult. in voce ναρκη) and Aëtius (ii, 185.) Is not this an application of the principle of galvanism in medicine?

Rhases insists, with becoming earnestness, on the propriety of administering purgatives, especially cholagogues, in cephalæa. His commentator Leonardus Jacchinus blames modern physicians for having substituted weak and ineffectual cathartics for the powerful medicines of this class used by the ancients.

Galen states correctly that cephalæa often arises from disease of the pericranium. (De Loc. Affect. l. c.)

SECT. VI.—ON PHRENITIS.

Phrenitis is an inflammation of the membranes, the brain also being sometimes inflamed along with them, and sometimes a preternatural heat fixes originally in the brain itself. The cause of this disorder is either a fulness of blood, or of a yellow bilious

humour; and sometimes the yellow bile, being excessively heated and converted into the black, becomes the cause of the worst species of phrenitis. And sometimes the affection arises from the brain's sympathizing with the diaphragm by means of the nerves distributed upon it. But the aberration of intellect which occurs at the acme of very hot fevers, and that which is occasioned by sympathy with the stomach, is not called frenzy but delirium. Cases of true phrenitis are, for the most part, attended with watchfulness, but sometimes with disturbed sleep, so that the patients start, leap up, and cry out furiously; when the complaint is occasioned by a sanguineous humour, with laughter; but when by yellow bile, with ferocity; and when by a black, with unrestrainable madness. They forget what is said and done by them, their eyes are bloodshot, and they rub them; they are sometimes squalid, sometimes filled with tears, or loaded with rheums. The tongue is rough, there is a trickling of blood from the nose, they pick at flocks of wool and gather bits of straw, and have acute fever during the whole continuance of the disorder. When a fever of a bad character is seated deeply, they have the pulse small and indistinct, with a certain degree of hardness. The respiration is large and rare when the brain is primarily affected. And, if the phrenitis be occasioned by sympathy with the diaphragm, the respiration is irregular, the hypochondria are retracted and have considerable heat; but, when it arises from sympathy with the brain itself, the parts about the face are hot and suffused with blood, and the veins are full. When a pituitous humour is mixed with the bilious, as the cause of the disease is compound, so also is its appellation; for it is called coma vigil. When a bilious humour prevails, persons so affected are troubled with watchfulness; and, when a pituitous is the cause, they lie in a state of coma. The elder writers before Galen called this disease catochus, but since then it has been called catoche and catalepsy.

The cure of phrenitis. If the strength admit of bloodletting, we are to abstract blood from the arm immediately and freely; but, if the patient be delirious and will not present his arm, or if there be apprehension of hemorrhage after the bleeding from the patient tearing his arm during the agitation of his delirium, we must open the straight vein in the forehead, and take away at once a sufficient quantity of blood. We are to use clysters

and injections of oil, or rose-oil with the juice of ptisan. When watchfulness prevails, we anoint the head with rose-oil, or with vinegar and rose-oil; in some cases fomenting it with hot water; and we must give the medicine from the heads of poppy, unless prevented by the weakness of the patient's powers; and must have recourse to the other remedies for insomnolency formerly mentioned. Let the patient be laid in a place which is in a moderate state as to light and temperature, and let there be no paintings in it, for these are apt to excite emotions in such cases. Let some of his most beloved friends come in and converse with him in a suitable manner, sometimes gently soothing him, and at other times chiding him more harshly. His food at first should consist of honied water, and afterwards of the juice of ptisan, or spoon-meats formed from chondrus, with some sweet potion, such as apomel, or hydrorosatum, or rhodomel, or the sweet hydromel. But the vinous hydromel which is brought from Cebyra in small vessels must be rejected, as it produces more mischief than wine itself, especially in affections of the head and before concoction. We are also to administer bread that has been soaked in water, and succory, and boiled lettuces. Or, if there be much effervescence, they may be given raw, and also the medullary part of the cucumber, of the pompion, of apricots, and the like. They must be kept from cold water, more especially if the affection be found to proceed from sympathy with the diaphragm. If their urine (as is likely) be retained, owing to their delirium, we must foment the lower part of the belly and bladder with warm oil and water, and then, by applying the fingers of the hand to the part, we must try to incite them to make water. We must also anoint the rest of the body with warm oil; and the patients are to be kept in a recumbent posture, for a state of quietude is to be maintained as much as possible; and, if they be rich, they are to be restrained by their servants; but, if not, they are to be bound with ligatures. For irregular motion is apt to produce prostration of the strength. And for another reason, too, the feet ought to be bound with ligatures after having been bathed, and friction applied to them, namely, for the sake of revulsion. But, if the attack be more protracted and difficult to remove, we must abstain from all narcotics; and to the fomentations of the head are to be added things of a discutient nature, such as the juice of mint, or of wild thyme,

or of calamint, or of rue; and then we must use errhines. After the seventh day, if the viscera be inflamed, we are to soothe them by cataplasms of linseed and raw barley-flour in oil and water. We are then to apply dry cupping or cupping with scarifications to the parts, and to the back part of the head and the spine. But, if the body be observed to be very squalid and hot, even if the fever remain, we must use baths of fresh water, and plentiful anointing, and give some thin and weak wine, in order to rouse the strength; we need not apprehend any mental alienation that will thereby be produced; for, either it will not take place at all, as the disease is on the decline, or, if it do, it may be easily removed. When the disease further abates, we must have recourse to gestation and suitable restoratives. Recovery may be promoted by avoiding intoxication, anger, indigestion of the food, and more especially exposure to the heat of the sun.

COMM. COMMENTARY. Hippocrates treats cursorily of phrenitis in several of his works, particularly 'de Morb.' (iii, 9,) and 'Epid.' See Galen (Meth. Med. xiii, de Loc. Affec. v, 4); Aretæus (de Morb. Acut. i, 1); Alexander (i, 13); Aëtius (vi, 2); Actuarius (Meth. Med. iv, 2); Nonnus (c. 25); Pseudo-Dioscorides (Euporist. i, 13): Cælius Aurelianus (Morb. Acut. i, 1, &c.); Celsus (iii, 18); Serenus Samonicus; Octavius Horatianus (ii, 2); Serapion (i, 20); Mesue (de Ægr. Capit. c. 19); Avenzoar (i, 4, c. 6); Haly Abbas (Theor. ix, 4, and Pract. v, 13); Alsaharavius (Pract. i, 2, c. 8); Rhases (ad Mansor. ix, 3, and Contin. i, 28.)

Hippocrates, in his 'Epidemics,' details several cases of phrenitis, which would appear to be remittent fevers, complicated with determination to the brain, rather than inflammation of the brain.

Galen gives a very circumstantial detail of the symptoms, which is well worth consulting. (Loc. Affec. l. c.) Our author's description is very complete, considering its brevity. He closely follows Alexander, who agrees with him in recommending the most questionable part of our author's treatment; we mean the administration of wine. Of course, however, it must have been a weak light wine. He insists that when the strength is much reduced, it does more good than harm, by improving the powers of the constitution. Cælius, however, says that wine is nothing

less than a poison. Alexander, Aretæus, and Aëtius agree that cold drink should be given with caution. Most of the authorities have correctly described the pulse as being small and dense. Our author's practice, in regard to bleeding from the temporal vein, is derived from Alexander, who gives a very interesting case, in which he applied it with great success. He recommends great caution in the administration of narcotics. Upon the whole he is favorable to the tepid bath, as serving to procure sleep, but he condemns the hot. Among the minutiæ of practice, we may mention that Aretæus and Celsus, like our author, recommend all pictures and such like gaudy objects to be removed from the apartment of the sick. Celsus directs us, in pointed terms, after bleeding and purging, to get the head shaved, and fomented with a decoction of emollient herbs. To procure sleep, he recommends us to give draughts containing poppies and hyoscyamus; or to apply the apples of the mandragora below the pillow of the patient; or, to rub his forehead with amomum, or with the tears of mulberry. He informs us, however, that Asclepiades condemns soporifics, as inducing lethargy. For the sake of procuring sleep he recommends gestation performed at night, and of swinging the patient in a suspended couch. For the same purpose, the Pseudo-Dioscorides recommends us to introduce the juice of poppies or mandragora upon wool into the rectum. COMM.

Cælius Aurelianus gives an admirable account of the symptoms and treatment of this disease; and his views are, in this case, not very different from those of Hippocrates and Galen. He informs us that Asclepiades condemned venesection, which, he said was nothing less than murder; that he disapproved of keeping the patients in a dark place; and that he allowed them plenty of strong wine. Both Cælius and Celsus properly animadvert upon his treatment. Cælius also blames Diocles for admitting of venesection after the seventh day, and for approving of too acrid clysters. He finds fault with Themison for allowing too much food and wine at the commencement, and for using the bath indiscriminately. He condemns the practice of Heraclides, because he applied the treatment of the Empirics injudiciously, and admitted of bleeding from the frontal vein, which, Cælius says, is most prejudicial.

The treatment recommended by Octavius Horatianus is little different from that of the others.

COMM. The Arabians call the disease *karabitus*. The symptoms, according to Haly, are heat not much increased, but the head warmer than the rest of the body; alienation of the mind; watchfulness, but sometimes somnolency, from which state the patient wakes with starting; blackness of the tongue; picking at the bed-clothes; pulse in all cases weak, small, and hard. He is very minute on the treatment, recommending bleeding from the cephalic vein *ad deliquium*; cupping; gentle laxatives, such as prunes and tamarinds; vessels filled with cold water or snow applied to the head; in certain cases sinapisms to the feet; and, when watchfulness is protracted, applications to the head, containing poppies, mandragora, lettuce, &c. Alsaharavius particularly mentions general bleeding, bleeding from the temporal vein or the angular vein of the nose, pouring decoctions of refrigerant herbs over the head, and, when the insomnolency is obstinate, washing the temples with infusions of hyoscyamus, poppies, lettuce, &c. Avenzoar speaks of opening the artery in the head, an operation mentioned by Galen. Rhases directs us to pour vinegar and rose-oil from a height upon the head. His general remedies are similar to those of the others, namely, general and local bleeding, with gentle laxatives, such as myrobalans, prunes, and tamarinds. Serapion and Avicenna direct much the same treatment as our author.

SECT. VII.—ON PHLEGMON OF THE BRAIN.

When the brain is inflamed, it is often so swelled that the sutures of the skull are separated. The pain is very strong and permanent; there is much anxiety, and much redness of the countenance, with swelling; the eyes protrude, and the head swells. We must let blood from the arm, and also detract by the nose, and from the vessels below the tongue. We are also to use the fomentations suitable for inflammations of the head, and cataplasms of a moistening and concocting nature.

COMM. COMMENTARY. This Section is taken from Aëtius (vi, 25), or Oribasius (Synops. viii, 11.) See also Avicenna (iii, i, 3, c. 4); Haly Abbas (Theor. ix, 4, and Pract. v, 14); Alsaharavius (Pract. i, 2, 9.)

The Arabians call it *massera*. Phlegmon of the brain, according to Haly Abbas, is attended with swelling of the brain, so as to occasion a separation at the sutures, redness of the face, acuteness of vision, and sympathetic affection of the stomach. He recommends bleeding at the arm, cooling laxatives, applications of cold things to the head, and so forth. The translator of Alsaharavius calls it 'flegmon' and 'apostema in cerebro;' says it is occasioned by a collection of corrupted blood in the vessels of the brain; and directs general bleeding, opening of the nasal vein, or of the sublingual. Avicenna's account is nowise different from our author's. COMM.

Hippocrates makes mention of *sphacelus* of the brain, which, he says, generally proves fatal in three days. (Aphor. vii, 48.) From the Commentary of Galen it would appear that by sphacelus he meant that state which is the result of an extreme degree of inflammation. Another of his commentators, Theophilus, states that by sphacelus was meant incipient mortification. (Ed. Dietz. ii, 537.) It was therefore a species of *ramollissement*. See an elaborate disquisition into the nature of the sphacelus of Hippocrates by Dr. Coray. (Ad Hippocrat. de Aer. &c. 64.)

SECT. VIII.—ON ERYSIPELAS OF THE BRAIN.

Erysipelas occurs also in the brain, and the patient suffers in the following manner: He has pain of the whole head, and feels as if there were fire in it; his face is cold and somewhat pale, and his mouth dry. Wherefore, bleed such a patient, and more particularly abstract blood from the veins under the tongue, and apply cooling things, such as we use in other kinds of erysipelas.

COMMENTARY. Aëtius, Oribasius, Avicenna, Haly Abbas, and Alsaharavius treat of this disease in much the same terms as our author. Haly says there is less heat of the face than in phlegmon, nay, that the face even feels cold. Alsaharavius describes it as being accompanied with violent pain, much inflammation, and blackness of the face. He approves of the depletory treatment in general. COMM.

SECT. IX.—ON LETHARGY.

Lethargy, which is a lesion of the rational part, has the same seat as frenzy, I mean the brain, but the matter which causes it is of an opposite nature; for it is occasioned by a humid and cold phlegm irrigating the brain. It is attended with an obscure fever, which is not very pungent, and with somnolency. The pulse is large, rare, and undulatory; the respiration is very rare and weak. Lethargics are altogether disposed to sleep; are roused with difficulty; can scarcely be made to answer questions; are forgetful and delirious; they yawn frequently, and remain sometimes with their jaws distended, as forgetting to shut their mouths; their evacuations by the belly are generally watery, but sometimes, on the contrary, the belly is dry; their urine is like that of cattle. Some have tremblings and sweatings. Carus being occasioned by the same matter as lethargy differs from it in this, that fever precedes carus and is more violent, whereas it is subsequent in lethargy; and in this respect also, that carus often supervenes upon other complaints, for it often follows paroxysms of fevers, epilepsy, and compression of the brain, as from the bone in fractures, or from the meningophylax pressing upon the anterior ventricle of the brain; whereas lethargy has a certain peculiar formation.

The cure of lethargy. When the strength permits, we must open a vein; but, when it does not, we must use acrid clysters. We must also lay the patient in an apartment of large size, and having a moderate degree of light, and apply to the head an embrocation of oil to which castor has been added. Some, instead of the oil, use vinegar and rose-oil with the castor, by which they strengthen and warm the head at the same time. And, having anointed the rest of the body, particularly the extremities, with old oil, they stimulate them with calcined nitre, pellitory, pepper, or the granum cnidium. It is also possible, by making them into cerate with castor, to use them in this way. We must likewise apply strong-scented things, triturating thyme, marjoram, and pennyroyal, with vinegar. We may smear the mouth and palate with mustard pounded in a small quantity of honey, and we may even remove with the fingers the phlegm which adheres to it. And, if they will admit it, it is proper to

use a masticatory consisting of oxymel with hyssop, pennyroyal, marjoram, or mustard itself. We may give also in their drink things of a diffusible nature, more particularly the diospolites, to the amount of a spoonful, with oxycrate. When there is chronic trembling, we must give two or three scruples of castor; or, if there be a redundance of humours, and there be nothing to contra-indicate the use of it, we may add a scruple of scammony to the castor. When the disease is protracted, the head must be shaved and fomented with salt, millet, and the like, in small bags; and sinapisms are to be applied to the whole head, and medicines used to excite sneezing. Afterwards we may apply dry cupping, with much heat, or cupping with scarifications, to the back part of the head. It will be necessary to attend to the natural evacuations by means of clysters and diuretics. Apply to the lower part of the belly an embrocation with oil of rue, or Sicyonian oil with some castor. We must also attend particularly to the deglutition, injecting, by means of a vessel with a narrow mouth, warm water, to which has been added some sweet potion, more especially apomel. And, if there be inflammation in the intermediate parts, we must cure it with embrocations and cataplasms. To the nose is to be applied mustard triturated with vinegar, or burnt castor. Their food should consist of ptisan, or the decoction of oats, or that of alica, with oxymel, salt, or pennyroyal, sometimes giving of it every day, and sometimes only every alternate day. After food, ligatures are to be applied to the extremities, which may also be bent back; and the limbs are to be pinched; and sometimes we may even tear the hair violently in order to rouse them. Rubefacients to the thighs and legs are also proper. When the affection is in the decline, we may enjoin suitable gestation, direct the bath to be taken, and a restorative regimen to be used properly.

COMMENTARY. See Hippocrates (de Morbis, iii, 5); Celsus (iii, 20); Galen (Meth. Med. xiii); Aretæus (Cur. Morb. Acut. i, 2); Oribasius (Synops. viii, 1); Aëtius (vi, 3); Alexander (i, 14); Actuarius (Meth. Med. iv, 2); Nonnus (c. 22); Octavius Horatianus (ii, 2); Cælius Aurelianus (de Morb. Acut. i, 2); Avicenna (iii, i, 3, 7); Serapion (i, 17); Mesue (de Ægrit. Cap. 22); Haly Abbas (Theor. ix. 5, and Pract. v, 15); Rhases (Divis. c. 6, Contin. 1.) COMM.

COMM. The ancients, it will be remarked, ascribe the disease to serious congestion, which is a very plausible theory. All the other authorities recommend nearly the same treatment as our author.

There can be no doubt that by lethargus Hippocrates meant a remittent fever, resembling the causus. The other authorities on this subject also describe the disease as a febrile affection.

Aëtius, as usual, is minute and judicious. He remarks that purging is not only useful, by producing evacuation of the bowels, but also by occasioning revulsion. When the disease comes on after frenzy, he forbids venesection, but otherwise approves of it. He and Alexander strongly commend castor. Alexander directs venesection, if the patient's strength permit; the application of vinegar and rose-oil to the head; and, when the disease is on the decline, applications containing castor and other such stimulants. It is to be remarked, by the way, that Haly Abbas states this as the mode of treatment directed by Alexander Aphrodisiensis, from which it may be inferred that A. Trallian and A. Aphrodisiensis were the same person.

Celsus speaks favorably of the affusion of cold water.

Aretæus gives the plan of treatment very circumstantially, but his chapter on the symptoms of lethargy is lost. He lays it down that the disease is the counterpart to phrenitis, being occasioned by a cold humour oppressing the brain. The principle of his treatment seems to be to produce revulsion; for which purpose he recommends drastic purgatives and stimulant applications of all kinds to the skin. He is guarded in speaking of bleeding.

The methodical treatment recommended by Cælius Aurelianus is not much different from that of the other sects. He approves of bleeding, of shaving the head, and applying cupping-instruments to it, or else leeches; of making the patient lie in a bright light; of using gentle means to rouse him; but he justly condemns Diocles for recommending measures of great severity, which, he says, will but increase the disorder of the brain. He also disapproves of the practice of Praxagoras, who gave wine and hot stimulants; and further ridicules him for neglecting the head, and merely applying fomentations to the feet. He does not approve of Asclepiades' practice of treating the disease with strong sternutatories, sinapisms to the head, and analeptics. He finds fault with Themison for making his patient lie

in a dark place. He also condemns Themison's practice of giving aloes by the mouth before food, as it will make the food in the stomach spoil, that is to say, will interrupt the digestive process, or, in case of its not operating downwards, will be absorbed, and increase the constitutional disorder. He further disapproves of Themison's practice of carrying gestation to an inconsiderate length. He likewise condemns the use of the cold bath, which had been recommended by Themison. He then gives an account of the practice enjoined by Heraclides Tarentinus, the empiric, which, of course, he does not approve of; although, judging of it from modern views, we do not think it particularly objectionable. We dare not enter upon the detail of it, owing to its length. COMM.

The Arabians generally treat of it by the name of *sirsen frigidum*. Like the other authorities, Haly Abbas states the causes of the disease to be a cold and humid intemperament of the brain, or a collection of pituitous humours. As stated above, he quotes the practice of Alexander with approbation. He particularly recommends acrid clysters, drastic purgatives, shaving the head, applying stimulants to it, rubbing the feet, and in certain cases sternutatories. Rhases does not mention venesection; but Avicenna and most of his countrymen do. Avicenna and Mesue recommend emetics. Their treatment otherwise, like our author's, consists of acrid clysters, friction of the extremities, masticatories, calefacient and repellent applications to the head. With regard to the last, Mesue may be consulted with advantage. Rhases, in his 'Continens,' recommends bleeding, fetid pills, leeches, cupping, and afterwards sternutatories, friction of the extremities, and so forth.

SECT. X.—ON CATOCHUS, OR COMA VIGIL.

We have already, in treating of phrenitis, mentioned the formation of this disease, the symptoms whereof in general are the same as those of phrenitis and lethargy, being modified according to the prevailing matter. The peculiar symptoms are these: The patients remain fixedly stretched in a supine posture, having sometimes their countenance somewhat swelled and livid like those in lethargy, and sometimes with a florid redness in it; the upper eyelid seems drawn upwards and projecting, so that

they cannot wink. They seem also not to breathe, but to be as dead. The pulse is small, indistinct, and very dense. The discharges from the bowels and bladder are suppressed, or in small quantities. When the attack is moderate, they drink whatever fluid is poured into the mouth; but those who are overpowered by it reject the same by the nose. Those, therefore, in whom the phlegm prevails over the bile, we distinguish from those affected with lethargy by this, that there is no swelling present, nor is the colour livid like lethargics, except to a very small degree; and that they perspire moderately. The cases are dangerous in which there is much watchfulness, the urine is suppressed, the difficulty of breathing is intense, when they have sweats, and the drink regurgitates by the nose. If it be a woman that is affected, the complaint may be distinguished from uterine suffocation by the circumstance that she lies in a natural state, is sensible when spoken to, can be roused, but sinks again into a state of sopor. Some say that catochus is a different complaint from the coma vigil, for that it has not a compound, but a simple cause; namely, a cold and dry matter which obstructs the posterior ventricles of the brain, and occasions the disease; in which case, the patient being suddenly seized with it, remains in the same posture as when taken with it, that is to say, standing or lying, with his eyes open or shut. The ancients, therefore, called such patients *catochi*, which signifies *detained*, but the moderns call the complaint catoche and catalepsy. The cure resembles that which is already described, but is to be varied according to the difference of the symptoms.

The cure of catochus. Wherefore we must have recourse to venesection, more especially when the face is ruddy, or if the strength does not contra-indicate, we must use clysters, sometimes stimulant, when phlegm prevails; and sometimes emollient when bile prevails. In like manner we are to apply other remedies, and give food sometimes every day, and sometimes only every alternate one. The affection is very dangerous when produced by an error of the food or drink, in which case the patient is to be made to vomit without delay, and kept upon a restricted diet; and the bowels are to be stimulated, and an embrocation with cumin or rue applied to the belly. They who have been seized with the complaint from intoxication, after their surfeit has passed off, must be cured by using a more liquid

diet, such as the juice of ptisan. And the head is to be smeared with suitable ointments, which, if in summer, may be cold, but tepid, if in winter. If the surfeit do not pass off, nor the patient recover his senses, it will be time to give up the case as hopeless, and pack off.

COMMENTARY. Most of the authors referred to in the preceding Section may be consulted on catochus, or catalepsy. It is called by the Arabians *subet alsari*. On the characters of the pulse in catochus, see Galen (de Causis Puls. iv, 16.) Nonnus and other authorities remark that it is accompanied with fever. Their general treatment consists of venesection; clysters of the decoctions of rue and cumin, with nitre and honey; epithemes applied to the belly; and fomentations of water and oil to the head. Haly says that the disease arises from a collection of phlegm on the brain; from pressure in cases of fracture of the skull; or from the projection of the internal plate of the cranium. His treatment is judiciously modified according to the nature of the exciting cause. He approves of sinapisms to the head, friction of the feet, and so forth. Alsaharavius recommends venesection when the exciting cause is a bilious humour, but forbids it when the disease arises from a collection of phlegm. His treatment is judicious, but not much different from our author's. (Pract. i, 2, 13.) Rhases' general remedies are clysters, purgatives, restricted diet, and, if indicated, bleeding at the arm or ancles. COMM.

Cælius Aurelianus describes the disease with his usual accuracy. He says it occurs in cases of continual, intermittent, and ephemeral fevers. The symptoms, as detailed by him, are acute fever, loss of speech, dulness of the senses, pulse large, strong, and full, and the eyes fixed. With regard to his treatment, he says nothing of venesection, but approves of fomentations to the head of sweet tepid oil; and mentions common clysters, cataplasms to the loins, in order to relieve the retention of urine; shaving the head, and applying cupping-instruments to it, scarifications along the occiput, baths, fomentations of oil, &c. He disapproves of the practice of Chrysippus and Themison, who recommended stimulant ointments to the head, shaving the head, and applying sinapisms to it with sternutatories and acrid clysters.

SECT. XI.—ON THE LOSS OF MEMORY AND OF REASON; ON CARUS AND FATUITY.

The loss of memory sometimes occurs by itself, and sometimes along with impairment of the reason, as an impairment of the reason sometimes happens first by itself, and is then followed by that of the memory. When both suffer, the affection called fatuity is formed. These complaints have for a cause the exciting intemperament; but, if it is humid only, it will occasion impairment of the memory and reason, torpidity, drowsiness, long and deep sleep; but if complicated with coldness, it will produce carus and lethargy. In like manner, dryness alone brings on watchfulness, but when joined with heat, delirium and frenzy. These intemperaments are seated sometimes in the fluids, sometimes in the cavities of the brain, or in its vessels; or in the chyle diffused over the system, or in the substance of the brain; or else the temporal muscles may be affected. If the humours are mixed together, they will produce this affection. Whether the exciting intemperament be simple or compound may be learned from the appearance of the excretions. That the loss of memory and of reason springs from cold we readily ascertain; but whether it be accompanied with humidity or dryness, we judge of from the discharges, the habit and temperament of the patient, his mode of life, the season, and the country.

The cure. If the intemperament be cold, we must warm, but if accompanied with humidity, we must also dry; but if with dryness, we must, at the same time, moisten and warm. In like manner, when the intemperament is warm, we must cool; but if dryness also prevail, we must likewise moisten; or if humidity, we must both cool and dry. Where we find a sanguineous humour prevailing, we must bleed or use acrid clysters, then give hiera, and use masticatories; anoint the head, by mixing with oil things of a cooling and desiccative nature, we mean roses, myrtles, lentisk, and the like; and we must attend to the general system. But, if it proceed from an over-heat and fatigue, we must apply to the head the embrocation of vinegar and rose-oil; and otherwise use a cooling and moistening regimen in all respects, and with regard to food and drink.

If carus supervene upon fatuity or oblivion, it also is to be attended to as formerly mentioned under the head of lethargy, where we also stated the discrimination between these complaints.

COMMENTARY. See most of the authors on lethargy and catalepsy. COMM.

Nonnus says that carus resembles apoplexy, only that in the latter disease the posterior ventricle of the brain is more especially loaded with serum, whereas in carus the anterior is affected. It differs also, he says, from lethargy, in this respect, that fever precedes carus, but is subsequent to an attack of lethargy. Carus, he adds, is occasioned by a blow, pain of the head, and fracture of the bone compressing the brain. Alexander also says that, in carus, the anterior part of the brain is most affected; and hence the sensorial powers are much impaired. It is occasioned, he says, by violent pains which dissipate the vital spirits. On the cure of loss of memory, see Galen (de Loc. Affect. iii, 5.)

Avicenna has treated at great length of the subjects of this Section. Among other things he recommends the celebrated theriac, which contained a very diffusible stimulant oil. His treatment otherwise resembles our author's. The same may be said of Haly Abbas. For loss of memory, Alsaharavius recommends the application of fragrant and stimulant oils to the head, along with general treatment.

Cælius Aurelianus and Octavius have not treated of carus by name; but, according to Prosper Alpinus, the Methodists entertained similar opinions of the disease to the other sects. (De Med. Meth. x, 5.)

Procopius states that carus was a common symptom of the fatal plague which prevailed in the reign of Justinian. (Persic. ii.)

The philosophers, as well as the physicians, taught that loss of memory is often connected with disease of the posterior portion of the brain. See, in particular, the Commentary of Philoponus on Aristotle (de Anima, i.)

SECT. XII.—ON VERTIGO.

Vertigo is occasioned by a cold and viscid humour seizing upon the brain, whence the patients are ready to fall down from a very slight cause, such as sometimes from looking at any external object which turns round, as a wheel or top, or when they themselves are whirled round, or when their head has been heated, by which means the humours or spirit in it are set in motion. And sometimes it is occasioned by the anterior cavities of the brain being compressed in perforations of the skull for fractures, in which cases there are violent pains. When it is a primary affection of the head, it is preceded by strong pain in the part, by drowsiness, and noises in the ears; and some have either the sense of smell or of taste impaired. But in those cases which arise from sympathy with the orifice of the stomach, heartburn accompanies and nausea follows.

The cure. Those affected with vertigo are to be roused at the onset, by using strong-scented things of a suitable nature, by frictions, and such like; and, during the remission, for the recovery of the complaint, they ought first to be bled, and then purged with hiera. And after an interval we must use an acrid clyster of centaury, or the decoction of colocynth. After such evacuations, we are to apply to the back part of the head cupping-instruments with scarifications, and afterwards use masticatories and sternutatories. When there is heat in the head and noises in the ears, inasmuch as they are occasioned by hot vapours diffused in the arteries, we must have recourse to anteriotomy behind the ears, as will be described when treating of surgical matters.

COMM. COMMENTARY. See Galen (de Loc. Affect. iii, 12); Aretæus (Morb. Chron. Curat, i, 3); Aëtius (vi, 7); Oribasius (Synops. vi, 5); Actuarius (Meth. Med. vi, 2); Nonnus (35); Cælius Aurelianus (Morb. Chron. i, 2); Octavius Horatianus (ii, 2, 3); Serapion (i, 3); Avicenna (iii, 1, 5); Mesue (ii, 13); Haly Abbas (Theor. ix, 5; Pract. v, 20); Alsaharavius (Pract. i, 2, 6, 7); Rhases (Divis. 5; Contin. 1.)

Galen agrees with Archigenes that vertigo may either be a primary affection of the brain, or may proceed from sympathy

with the mouth of the stomach. Archigenes pretended to distinguish between the two cases in the manner described by our author, that is to say, when the disease is preceded by noises in the head, stupor, loss of the sense of smell, or of any other sense, he concluded that the disease was a primary affection of the brain; whereas, if preceded by nausea and heartburn, he believed that it had its origin in the stomach. COMM.

Aretæus details the treatment with great minuteness. He recommends restoring any suppressed secretion, bleeding at the arm, cupping, opening the frontal or nasal veins, sternutatories, emetics of hellebore and the like; cold applications to the head, friction of the extremities, gestation, walking, restricted diet, the cold bath, but not the hot. Aëtius, in an extract from Posidonius, treats of the disease in much the same terms.

Cælius Aurelianus recommends the same treatment as for cephalæa. Octavius approves particularly of hellebore.

Serapion directs us to open the arteries behind the ears, which practice, however, Galen had pronounced to be less useful than some had represented. Mesue makes mention of leeches to the nose, and medicines for renewing the menstrual and hemorrhoidal discharges when suppressed. Avicenna speaks of the actual cautery. (See Book Sixth, Sect. 1, of this Work.) Vertigo, according to Haly Abbas, may arise from a pituitous or sanguineous plethora of the cerebral vessels, or from compression occasioned by fracture. He approves of general and local bleeding only when there is a plethora of blood. In other cases he recommends drastic purgatives, aromatic stimulants, masticatories, and sternutatories. His treatment is judiciously modified according to the nature of the exciting cause. Alsaharavius recommends opening the arteries behind the ears, strong purgatives, clysters, gargles, and hot plasters, containing mustard, and the like. Aaron, one of Rhases' authorities, decidedly inculcates that vertigo may either be connected with disease of the brain or of the stomach. He principally recommends bleeding and purging, and also speaks favorably of cupping the nape of the neck.

SECT. XIII.—ON EPILEPSY.

Epilepsy, being a convulsion of the whole body with impairment of the leading energies, has its cause seated sometimes in the brain itself, and sometimes in its cavities. This is sometimes a pituitous and sometimes a melancholic humour. The disease also sometimes arises from sympathy with the orifice of the stomach (as happens in colic affections, as will be stated when treating of them); and sometimes it is propagated from other parts, when a cold aura ascends to the brain, either from the leg or the fingers of the hand. It has also been seen to proceed from the uterus in females, at the time they were pregnant, for after delivery it ceased. This disorder attacks mostly the young, more especially infants, and after them boys and adults; but least of all elderly persons and the old. Its precursors are, an involuntary commotion, both of mind and body, despondency, oblivion of accustomed things, terrifying visions in dreams, headach, continued fulness of the head (especially from acute anger), paleness of countenance, and a distorted motion of the tongue, so that some even bite it. When it proceeds from the stomach, palpitation thereof goes before, with rumbling and aching pain; and when fasting, or during a delayed meal, they fall into a paroxysm. When the attack comes on they suddenly fall down, are convulsed, and sometimes utter inarticulate cries. The characteristic mark of these cases is foaming at the mouth, all the other symptoms being common to other diseases. In certain instances the urine and fæces are evacuated involuntarily, and in some the semen also. In some cases, when the disease is very acute, it proves fatal speedily, by the continuance of the paroxysms, or the violence of the attack; but it is most frequently protracted, so that, if it be not removed by the attainment of manhood, by purging, or pregnancy, or if it invade after this period of life, it for the most part does not leave a man until death, unless removed by a suitable cure. The following substances are used to prove epilepsy, namely, the fumes of bitumen, or gagate-stone, or goats' horn, or the liver of a buck-goat when eaten, or the smell of the roasted liver.

The cure. When the patient is an infant, we need not be

particularly solicitous about it; for when its age changes to a more bilious and drier constitution, and the diet is more prudently regulated, the affection most commonly goes off spontaneously. But we must attend to the diet not only of the infants, but likewise of their wet-nurses. After boyhood, those that fall into the disease ought to have the convulsed and distorted parts freely anointed, and ligatures applied to them, when they are to be stretched out; and then the mouth is to be opened, and one must introduce a finger or a feather, smeared with oil of iris, in order to bring away the phlegm. We must also rouse the senses by strong-smelling things, such as hog's fennel, Cyrenaic juice, bitumen, and the pitch of cedar. But after the paroxysms, if nothing prevent, we must bleed from the arm; and when the paroxysm does not abate, we must apply a sinapism to the extremities, and a cupping-instrument to the hypochondria. When after these things no remission takes place, there can be but little hope, and yet the physician ought boldly to force castor into the mouth, and Cyrenaic juice, with honey and vinegar; and the decoction of centaury, or of colocynth, must be injected by the anus. Those that are recovering from an epileptic attack are to be evacuated after recovery by purging with hiera. This is the cure of a recent and acute attack of epilepsy. We will next deliver the treatment of the disease when it is in a chronic state. Wherefore the patients are to be made to persevere for a long time in drinking cold water; and when setting about the cure, it will be proper to bleed if nothing prevent; and after an interval of four or five days to recruit the body, and thus evacuate with a purgative, more especially black hellebore, colocynth, or scammony. The hellebore, without its medullary part, is to be pounded and strained, and sprinkled on five or six cyathi of honied water, or it may be taken in boiled honey with some pepper. Rejecting the seeds of the colocynth, fill it, still retaining the medullary part, with must, and allow to remain for a whole night; in the morning dilute the must, and give to drink. Or we may use the cathartic from white hellebore. It is this: Of cleansed bay berries, dr. viij; of white pepper, dr. viij; of alypias, dr. viij; of euphorbium, dr. viij; of white hellebore, dr. viij. Give these things at one dose, with the must in the colocynth, and it will evacuate well by vomiting.

After proper purgation let them be put into the bath, and on the third day cup the hypochondria and back with scarifications; and then, stopping for a sufficient number of days and recruiting the body, give the hiera from colocynth; and afterwards apply the cupping instrument to the head and nape of the neck, and the day following a cataplasm consisting of bread boiled in honied water, and pounded with bitter almonds, wild thyme, mint, calamint, or rue. This must be done for three days. Afterwards the head is to be shaven and rubbed with the juice of hog's fennel dissolved in vinegar, wherein cow-parsnip has been boiled; then, after stopping and recruiting the body, nine oboli of the antidote from colocynth are to be given in honied water; and, again, after an interval of some days, the antidote is to be repeated, and sternutatories used. After five or six days give castor in honied water; then stopping again administer a clyster of centaury and colocynth; and afterwards give the hiera again, and use masticatories and errhines in order, and apply a sinapism to the head. Acrid food must be seasonably given. Benefit may be obtained from oxymel of squills drunk every day, and honey in which the squill has been softened, to the amount of a spoonful. The diet should be of an incisive and attenuant nature; and therefore capers may be frequently taken with pickle. But they ought to abstain from flesh, pulse, and much wine, likewise from frequent venery, baths, mustard, and from drinking immediately after the bath, more especially of undiluted wine. Let them have recourse to gymnastic exercises and friction, and the last part that is rubbed should be the head.

On the cure of epilepsy from the stomach. If the disorder is occasioned by the stomach's being primarily affected, the patient must attend to his digestion, taking about the third hour some carefully-baked bread that has been soaked in some diluted wine, slightly astringent, and of a white colour. Give to such persons the medicine from aloes twice or thrice every year. "I once knew a boy," says Galen, "who was never seized with epilepsy after he carried a large piece of fresh peony appended from his neck." Agaric is beneficial to epileptics, also hartwort, the fruit and root of cow-parsnip, and the round birthwort drunk with water. Scarification of the legs frequently repeated is also of great use.

On epilepsy proceeding from some of the members. When the attack is threatened, and they feel a sensation in the part, whether the hand or foot, a tight ligature ought to be applied above it, and the cure attempted during the remissions, by applying some caustic substance to the part, such as the garden cresses (*lepidium*), preparations from cantharides, and the like. The Julian oxymel is also of great use to epileptics, by expelling the offending matter from the part. After those things which have been mentioned, the theriac and natural baths have place. During their whole life, they must particularly guard against indigestion, and be careful not to take food before digestion has been performed; avoid all incrassating food, too long abstinence from food, all vehement venereal impulse, much wine, and drinking, after the bath, more especially of undiluted wine, as formerly mentioned, and likewise of old and thick wines. They must avoid, also, all aromatics of an acrid smell, and such as fill the head; must abstain from looking down steadfastly from a high situation, from remaining long in the bath, and exposing the head to the heat of the sun.

COMMENTARY. Consult Hippocrates (de Morbo Sacro); Galen (de Sympt. Diff. 3; De Loc. Affect. iii, 11; De Puero Epileptico); Oribasius (Synops. viii, 3); Aëtius (vi, 13); Aretæus (Morb. Acut. i, 5; Morb. Chron. i, 4); Pseudo-Dioscorides (Euporist. i, 21); Alexander (i, 15); Leo (6); Actuarius (Meth. Med. i, 16); Nonnus (36); Serenus Samonicus; Scribonius Largus (12); Apuleius (Apologia); Celsus (iii, 23); Octavius Horatianus (ii, 2); Isidorus (Orig. iv, 8); Pliny (H. N. xxv, 5); Avicenna (iii, i, 5, 9); Serapion (i, 23); Haly Abbas (Theor. ix, 6; Pract. v, 21); Alsaharavius (Pract. i, 2, 36); Avenzoar (i, 9); Mesue (de Ægr. Cap. 26); Rhases (Div. 7, alibique.) COMM.

Our author derives his principles of treatment, more especially with respect to regimen and diet, from Galen's directions for the management of an epileptic boy. Part seems also to be borrowed from Oribasius.

Hippocrates with great good sense rebuts the popular belief of his own times, that the epileptic paroxysm is produced by demoniacal influence. He justly remarks, that the inferior animals, such as goats, are subject to this complaint; and that in them it is found to be occasioned by water in the brain. It

COMM. is almost certain that the *morbus sacer* of the ancients, and the disease under which the demoniacs laboured was epilepsy. See Athenæus (Deipnos. vii, 33), with the notes of Casaubon and Schweigh.; also Coray (ad Hippocrat. de Aq. &c. 12.) Leo, in fact, says expressly, when treating of epilepsy, that the vulgar call the disease the demon and lunacy; and in like manner Aretæus mentions that some refer the disease to the moon. See further Galen (Introductio); Dietz (ad Hippocrat. de Morbo Sacro); and Greenhill (Adnot. ad Theophil. v. 30, p. 340.)

Celsus lays down his rules of treatment with his usual judgment and elegance. His practice is very similar to our author's. He recommends bleeding; purging with black or white hellebore; shaving the head and applying cupping-instruments to it, and, in desperate cases, even the actual cautery; also friction of the extremities, and bleeding in the foot, along with attention to exercise and diet. The use of hellebore in epilepsy is mentioned by Pliny, and by Aulus Gellius (Noct. Attic. xvii, 15.)

The poet Lucretius gives a very glowing and accurate description of the symptoms and causes of epilepsy. (De Rerum Natura, iii, 485.)

Aretæus delivers separately the treatment of an acute attack and of the disease when in a chronic state. For the former he recommends the general remedies (we mean bleeding, clysters, and emetics.) Among the medicines enumerated by him for the cure of epilepsy, he mentions copper, which, he says, when given with cardamon, will act either upwards or downwards. We need scarcely say that copper has been strongly eulogised in modern practice. In the treatment of chronic cases he pays particular attention to the head, opening the veins and arteries of it, boring the bone down to the diploe, and applying the actual cautery to it. A more rational and less dangerous procedure was the application of embrocations containing cantharides and other such rubefacients to the scalp; in that case he recommends milk to be drunk beforehand, to prevent the bladder from being affected.

Aretæus and most of the authorities mention the gagate stone or jet as a test of epilepsy. The smell of it was said to bring on an attack. He exclaims in affecting terms against the abominable means often had recourse to for the cure of this disease. And so also Pliny (H. N. xxviii, 2.)

Aëtius, Oribasius, Actuarius, and Alexander treat the disease upon the same principles as our author. Alexander, although otherwise a most judicious and original writer, expresses great confidence in the use of amulets, for the preparation of which he gives very minute directions. Jasper is particularly commended as an efficacious amulet. One of his amulets is the nail taken from the arm of a malefactor who had been crucified! In his general treatment he particularly approves of giving drastic purgatives and emetics. COMM.

Isidorus thus defines epilepsy: "Epilepsia vocabulum sumpsit quod mentem apprehendens pariter etiam corpus possideat. Fit autem ex melancholico humore quoties exuberaverit, et ad cerebrum adversus fuerit."

No ancient author has treated of epilepsy more accurately than the great Methodist Cælius; but his account is so long and minute, that it is impossible for us to do justice to it in an abridgment. The causes of the complaint which he enumerates are drinking too much wine, indigestion, compression of the brain, and frights. He says that the whole nervous system is affected, but especially the part seated in the head. When the patient is an infant, he properly directs us either to change the nurse, or to pay particular attention to her diet. Bloodletting he approves of on a first attack, unless the stomach be loaded with crudities; and if there be pain in any part of the head, he directs leeches to be applied to it. He recommends gargles, and rubbing the skin with substances which occasion an eruption of pustules. He enjoins great caution in the use of hellebore. He approves of gentle exercise, a light diet, abstinence from wine, change of scene, or a sea-voyage. With respect to the modes of treatment pursued by the other sects, he greatly disapproves of the application of fire and other hot things to the head, and of strong sinapisms to the other parts of the body. Escharotics applied to the head, he says, only increase the disorder; and the use of bull's blood, or that of a man recently killed, and other such ridiculous remedies, he properly treats with contempt. He disapproves of diuretics, and of hellebore, scammony, and the like, when administered indiscriminately. He speaks unfavorably of chalybeates.

The Arabians follow closely the views of their Grecian masters, without suggesting any material improvement. Haly Abbas says

COMM. that epilepsy is a convulsion which either comes on periodically, or at no stated times; and that it either arises from the brain itself, or from sympathy with the stomach, or with some other parts of the body. It is occasioned, he says, either by a gross humour collected in the ventricles of the brain, or from compression produced by fracture. He makes mention of the epileptic aura, and, like our author, states that the disease is distinguished by foam at the patient's mouth. He joins Hippocrates in pronouncing such cases as occur before puberty to be not difficult to cure, but those which supervene after that age to be most intractable. When the complaint occurs in an infant, he properly directs us to attend both to the nurse's and the infant's diet. In cases attended with plethora he approves of general bleeding, cupping the limbs, and opening the saphena. When the disease is protracted he advises to apply cupping-instruments to the neck, and to give drastic purgatives, such as black hellebore, colocynth, &c. When it appears to proceed from the stomach he approves of emetics. He commends peony applied as an amulet. It is worthy of remark that Andreas Laurentius, in the 17th century, speaks confidently of this remedy. So inveterate is the dominion of superstition and ignorance! Alsaharavius gives a curious account of epilepsy, but mixed with some superstitious notions. He says he had had ocular proof that epileptics are possessed with demons; for that he had known many of them who had a knowledge of things which he was sure they had never learned. Like the others, he speaks of amulets; but his general treatment is sufficiently rational and scientific.

Rhases gives the theories and practice of preceding authors along with his own remarks, which, however, contain no very original opinions. One of his Arabian authorities recommends bleeding at the arm, and also by cupping and opening the occipital arteries, rubbing the head with mustard, purging with hiera, sternutatories, &c. The application of mustard to the head is approved of by most of his authorities.

Like our author, most of the ancient writers approve of Cyrenaic juice, or assafœtida, in cases of epilepsy.

SECT. XIV.—ON MELANCHOLY, MANIA, AND DEMONIACS.

Melancholy is a disorder of the intellect without fever, occasioned mostly by a melancholic humour seizing the understanding; sometimes the brain being primarily affected, and sometimes it being altered by sympathy with the rest of the body. And there is a third species called the flatulent and hypochondriac, occasioned by inflammation of the parts in the hypochondria adjoining to the stomach, by which sometimes noxious vapours or auræ are transmitted to the brain, and sometimes part of the substance of the humour. The common symptoms of them all are fear, despondency, and misanthropy; and that they fancy themselves to be, some, brute animals, and imitate their cries; and others, earthen-vessels, and are frightened lest they be broken. Some desire death, and others are afraid of dying; some laugh constantly, and others weep; and some believe themselves impelled by higher powers, and foretell what is to come, as if under divine influence; and these are, therefore, properly called demoniacs, or possessed persons. The peculiar symptoms of melancholy, from sympathy with the general system, are leanness, darkness, and shagginess; the whole appearance melancholic, either by nature, or acquired by anxiety, want of sleep, the administration of noxious food, or stoppage of the hemorrhoidal, or menstrual discharge. Melancholy, from affection of the hypochondria, is indicated by indigestion, acid eructations, heat and heaviness of them, retraction of the hypochondria, and sometimes inflammation, especially in the beginning; and then, when they increase, melancholic symptoms supervene. These are relieved by digestion, or copious discharges, or flatus, or vomiting, or eructations. When none of these symptoms, or very few of them, are present, melancholic symptoms appearing indicate that the brain is primarily affected, and for the most part from a melancholic humour. When the complaint is occasioned by yellow bile, which, by too much heat, has been turned into black, it will bring on the disease called mania, which occasions ungovernable madness, so that those affected with it will destroy persons who come near them unguardedly.

The cure of melancholy. Those who are subject to melancholy from a primary affection of the brain are to be treated with fre-

quent baths, and a wholesome and humid diet, together with suitable exhilaration of mind, without any other remedy, unless when, from its long continuance, the offending humour is difficult to evacuate, in which case we must have recourse to more powerful and complicated plans of treatment. These cases are to be purged from the first with dodder of thyme (*epithymus*), or aloes; for if a small quantity of these be taken every day, it will be of the greatest service, and open the bowels gently. After purging, as we have mentioned, give wormwood, sometimes macerating and boiling the herb in water to the amount of two cyathi, and sometimes diluting the juice with water, to the amount of half a drachm, and giving it frequently. Let them drink of the most acrid vinegar before going to sleep, and dip, for the most part, their condiments in it before eating them. But it will be better if to the vinegar be added squills, poley, or the slender birthwort. When you meet with an incipient case of the complaint, from sympathy with the general system (as described above), and the body is firm, you must, by all means, begin with phlebotomy, and after phlebotomy, when the strength is recruited, purge downwards, with the wild cucumber, and the composition from the black hellebore, and promote the hemorrhoidal and menstrual discharges, if the affection be occasioned by retention of them. Diuretic remedies are likewise proper, as also evacuations by perspiration. But if the complaint arise from disorder of the hypochondria, we must attend to them, and foment them with a decoction of rue, dill, wormwood, penny-royal, the seed of the chaste-tree, and of the fruit of the bay-tree; for these soothe the pains and diminish flatulence. They may be boiled in oil and applied; and the cataplasms of them ought to contain the remedies for flatulence, namely, parsley, or anise, or cumin; and it will not be improper to add cyperus, iris, and frankincense, to the cataplasms. These things are to be allowed to remain in general, even during the day, and whether the patient eat or fast; and, when taken away, apply some other protection, such as a broad piece of wool. Use dry-cupping for flatulence, and cupping with scarifications for pains and inflammations. While directing your attention to the cure, you must not forget mustard, and apply acrid *smegmata* and calefacient plasters to the back and belly. In chronic cases, the most powerful remedy is evacuation, by vomiting with hellebore.

The diet for all melancholics should be wholesome, and moderately moistening; abstaining from beef, roe's flesh, dried lentil, cabbages, snails, thick and dark-coloured wines, and, in a word, from whatever things engender black bile.

The cure of mania. Persons affected with mania are to be treated like melancholics; and, in particular, we must apply to the head rose-oil, or rose-oil with vinegar, and purge with the bitter antidote called hiera, having previously bled them; and we must use leeches to the head. But nothing is of such service as horse-fennel, either the root or seed drunk in water. A drachm of the root of bryony with water may be taken every day. If the maniacs will not be persuaded to take the purgative medicines, they must be mixed with their food, in a concealed manner, such as with mouthfuls of meat, or dried figs, or dates, or else with their drink. But, above all things, they must be secured in bed, so that they may not be able to injure themselves, or those who approach them; or swung within a wicker-basket in a small couch suspended from on high.

COMMENTARY. Consult Hippocrates (Aphor.); Galen (Comment. in Aphor., de Morb. Vulg.); Celsus (iii, 18); Aretæus (de Morb. Chron. i, 6, and de Curat. Morb. i, 5); Aëtius (vi, 8); Nonnus (32); Oribasius (Synops. viii, 17); Alexander (i, 16); Actuarius (de Dig. Morb. ii, 34); Octavius Horatianus (ii, 2, 5); Mesue (de Ægr. Cap. 34); Serapion (i, 22); Avicenna (iii, 1, 4); Avenzoar (i, 9, 16); Haly Abbas (Theor. ix, 7; Pract. v, 23); Alsaharavius (Pract. i, 2, 27); Rhases (ad Mansor. ix, 13; Contin. 1). COMM.

Hippocrates, in his Aphorisms, points out the lower intestines as the seat of melancholy, and directs us to cure the complaint by purging. Galen, in his Commentary, agrees with his principles and practice. Galen states correctly that melancholy sometimes changes to epilepsy, and *vice versa*, that epilepsy is often succeeded by melancholy. (De Loc. Aff. iii, 10.) He gives a curious extract from the works of Diocles, with remarks upon the same.

Aretæus considers melancholy as an incipient mania. He gives a masterly sketch of the different modes in which mania makes its attack, and relates an interesting case of a joiner, who was perfectly sound while engaged at his work, but no sooner left the place where he was occupied than he became

COMM. mad. For the cure of melancholy he advises blood to be abstracted at the commencement, according to the patient's strength and condition. He approves then of giving black hellebore, and of applying cupping-instruments over the liver, stomach, or to the head, according as these may happen to be affected. He recommends then wormwood and aloes. When the menstrual or hemorrhoidal discharges are stopped, they are, if possible, to be restored; and for this purpose blood may be abstracted from the ancle, or even from the arm. He also approves very much of the natural hot baths.

Celsus, in cases of melancholy and mania, recommends in particular vomiting and purging by hellebore; with the black species, if the patient is affected with grief; but with the white, if with gladness. He also approves of bleeding.

Aëtius gives an interesting account of the treatment of melancholy, principally extracted from the works of Galen, Ruffus, Posidonius, Archigenes, and Justus. The remedies which all of them seem to have reposed most confidence in are drastic purgatives combined with bitters and carminatives. They approve, however, of general bleeding and cupping, when indicated by the symptoms of the complaint, and the state of the patient. Nonnus in like manner prescribes bleeding in the forehead, purging with hiera picra, acrid clysters, and bitters, such as gentian and stæchas (*lavendula stæchas.*)

Alexander's plan of treatment is very circumstantially detailed; but it differs very little from our author's, except that he recommends Armenian bole instead of white hellebore. Like Aretæus, he strongly commends the use of the hot bath for the cure of melancholy. He speaks highly of a well-regulated diet, consisting principally of rock fishes, domestic fowls, and emollient pot-herbs, such as lettuces, mallows, and the like. He forbids cabbages, beef, the flesh of stags and of all other wild animals. Instead of hellebore, Serapion and Avicenna particularly praise the lapis lazuli. Haly Abbas gives a graphic delineation of the bizarre fancies, absurd fears, hopes, and vain imaginations of melancholics and maniacs. Like the other authorities, he attributes the disease to the prevalence of black bile. Without doubt, as has been often remarked, the alvine discharges in such cases are dark-coloured; and this, no doubt, gave rise to the ancient opinion that the disease originates in

black bile. When the patient is young, and of a hot temperament, Haly abstracts blood from the arm or temples. He approves particularly of hot drastic purgatives, such as black hellebore, scammony, agaric, and the like. He also gives poppies, lettuces, &c. to compose the patient. He recommends cholagogues, such as the decoction of wormwood, and the like. But his treatment is too minutely and circumstantially detailed to admit of its being done justice to within our narrow limits. The same may be said of the account given by Alsaharavius. Rhases in certain cases approves of venesection for the cure of melancholy. When connected with dyspepsia, he recommends emetics and purgatives, especially black hellebore. He also approves of the tepid bath. COMM.

We must now mention the opinions of the Methodists. In cases of melancholy Cælius Aurelianus disapproves of aloes and wormwood, as acting too violently; and also forbids venesection and purging with hellebore. On the contrary, he recommends astringent articles of food, and astringent applications containing galls, alum, hypocistis, &c. to be laid over the stomach. Of mania he gives a fuller account, replete with much valuable matter, that does not readily admit of abridgment. He enumerates many existing causes of the complaint, such as intoxication, inordinate passions, indigestion, exposure to the sun, suppression of the hemorrhoidal and menstrual discharges, and the like. Maniacal persons, he says, are differently affected, one believing himself a cock, another a tile, another a god, another an orator, and such like ridiculous fancies. He then inculcates the important fact that the affection of the mind is always secondary, and not primary, as some had supposed. His moral and medical treatment is of the most emollient kind; and he enjoins retirement and quietude. When the patient's strength will permit, he approves of venesection, the application of cupping-instruments to the head, and leeches to any other parts of the body which may be particularly affected. He commends strongly the bath of oil and the natural hot baths. He also approves of hellebore. He condemns the practice of the other sects in many respects. He does not approve of abstracting blood from both arms, so as to produce deliquium, nor of keeping the patient constantly in a dark place, nor of opening the temporal artery. He disapproves of applying narcotic fomentations

COMM. to the head. He properly forbids all corporal punishment, although he approves of contradicting the whims of the maniac, and of reasoning him into a better train of thought.

Isidorus thus distinguishes epilepsy, melancholy, and mania: "Epilepsia autem in phantasia fit, melancholia in ratione, mania in memoria." (Orig.)

The use of hellebore in mania and melancholy is often alluded to in the works of the Latin Classics. See, in particular, Horace (Sat. ii, 3); Perseus (Sat. iv, 16.) We are inclined to think that it was the black hellebore which was given in Anticyra. See Dioscorides (iv, 146.)

Cicero makes some pertinent remarks on the distinction between mania and melancholy. (Tusc. Disp. iii, 5.)

SECT. XV.—ON INCUBUS, OR NIGHTMARE.

Some say that this disorder is called *ephialtes* in Greek, from the name of a man, or from those in it fancying as if one leaped upon them. But Themison, in the tenth book of his Epistles, calls it *pnigaleon*, from a Greek word signifying suffocation. It attacks persons after a surfeit, and who are labouring under protracted indigestion. Persons suffering an attack experience incapability of motion, a torpid sensation in their sleep, a sense of suffocation, and oppression, as if from one pressing them down, with inability to cry out, or they utter inarticulate sounds. Some imagine often that they even hear the person who is going to press them down, that he offers lustful violence to them, but flies when they attempt to grasp him with their fingers. The evil must be guarded against at the commencement; for when it continues long, and attacks every night, it is the forerunner of some serious disease, such as apoplexy, mania, or epilepsy, when the exciting cause is determined to the head; for such as persons affected with epilepsy are, during the day, those labouring under nightmare are in their sleep. We must evacuate the patient's general system by opening a vein and administering purgatives. Black hellebore is especially serviceable to such persons when given to the amount of a drachm, if three oboli of scammony, and some of the aromatics, such as anise, wild carrot, and Macedonian parsley, be mixed with it. The composition called hiera, from wild gourd, is also of great service; it is the hiera of

Ruffus. The diet should be light, and they ought to avoid everything that is flatulent. They are benefited also by the fruit of peony: fifteen of the black grains of which may be pounded with water and drunk frequently.

COMMENTARY. See Aëtius (vi, 12); Oribasius (Synops. viii, 2); Actuarius (i, 16); Cælius Aurelianus (Tard. Pass. i, 3); Psellus (Opus Medicum); Avicenna (iii, 1, 5, 7); Alsaharavius (Pract. i, 33); Rhases (ad Mansor. ix, 12, Contin. i.) COMM.

The other ancient authors treat the complaint, like our author, by evacuants. Bleeding (Rhases recommends this to be done at the ancle), drastic purgatives, and friction of the extremities are the common remedies. Alsaharavius says that, if not cured by bleeding, it is to be treated, as epilepsy, with hiera and the like. Even Cælius in this case nearly agrees with the others, recommending restricted diet, and, if the disorder is great, venesection. He also approves of applying cupping-instruments with scarifications on the side of the throat, and, when the disease is protracted, of emetics, and shaving the head. For the cure of incubus, Mesue and Rhases recommend bleeding and an attenuant diet. Ruffus, as quoted by the latter, recommends vomiting, purging, an attenuant diet, sternutatories, masticatories, and ointments to the head, containing castor and the like.

Psellus gives a very graphic description of incubus. (Op. Med.)

SECT. XVI.—ON LYCAON, OR LYCANTHROPIA.

Those labouring under lycanthropia go out during the night imitating wolves in all things, and lingering about sepulchres until morning. You may recognize such persons by these marks: they are pale, their vision feeble, their eyes dry, tongue very dry, and the flow of the saliva stopped; but they are thirsty, and their legs have incurable ulcerations from frequent falls. Such are the marks of the disease. You must know that lycanthropia is a species of melancholy which you may cure at the time of the attack, by opening a vein and abstracting blood to fainting, and giving the patient a diet of wholesome food. Let him use baths of sweet water, and then milk-whey for three days, and purging with the hiera from colocynth twice or thrice. After the purg-

ings, use the theriac of vipers, and administer those things mentioned for the cure of melancholy. When the disease is already formed, use soporific embrocations, and rub the nostrils with opium when going to rest.

COMM. COMMENTARY. See Aëtius (vi, 11); Oribasius (Synops. viii, 10); Actuarius (Meth. Med. i, 16); Anonymus (de Lycanth. ap. Phys. et Med. Min.); Psellus (Carm. de Re Med. ibid.); Avicenna (iii, i, 5, 22); Haly Abbas (Theor. ix, 7, Pract. v, 24); Alsaharavius (Pract. i, 2, 28); Rhases (Divis. 10, Cont. i.)

All the other authorities give much the same account of this species of melancholy as Paulus. If we adopt Dr. Mead's theory respecting the dæmoniacs mentioned in Scripture, we may conclude that the man, whose state is described in Luke (viii, 27), was affected with this disease. Dr. Mead is further of opinion that Nebuchadnezzar was seized with lycanthropia. The reader will find much curious information on this head in Burton's 'Anatomy of Melancholy,' from which all Mead's opinions are borrowed.

The Arabian term is *cutubut*.

Avicenna recommends the application of the actual cautery to the sinciput, when the other remedies fail. Haly Abbas describes the disease by the name of *melancholia canina*. He says the patient delights to wander among tombs, imitating the cries of dogs; that his colour is pale; his eyes misty (tenebricosi), dry, and hollow; his mouth parched; and that he has marks on his limbs of injuries which he has sustained from falls. He recommends the same treatment as our author: indeed he evidently merely translates this section of Paulus. Alsaharavius seems also to allude to this disease by the name of *melancholia canina*. Rhases' account of it is quite similar to our author's.

Schneider has given some interesting critical remarks upon this section of Paulus at the end of his edition of Nicander's 'Theriacs.'

SECT. XVII.—ON LOVE-SICK PERSONS.

It will not be out of place here to join love to the affections of the brain, since it consists of certain cares. For care is a passion of the soul occasioned by the reason's being in a state of

laborious emotion. The following symptoms attend lovers: Their eyes are hollow, and do not shed tears, but appear as if overflowing with gladness, their eyelids move rapidly; and even, when none of the other parts of the body are affected, these parts are always so affected in lovers. There is no pulse peculiar to lovers, as some have supposed, but it is the same as that of persons labouring under care. When they call to recollection the beloved object, either from seeing or hearing, and more especially if this occur suddenly, then the pulse undergoes a change from the disorder of the soul, and, therefore, it does not preserve its natural equability or order. Such persons, therefore, being desponding and sleepless, some physicians, mistaking their affection, have wasted them by prohibiting baths, and enjoining quietude, and a spare diet; but wiser ones, recognizing the lover, direct his attention to baths, the drinking of wine, gestation, spectacles, and amusing stories. Some must also be attacked with fear; for, while they think of nothing but love, the affection is difficult to remove. Wherefore, they ought also to be roused to emulation with regard to the objects of their peculiar interest in life; and, upon the whole, their understanding should be diverted to other concerns.

COMMENTARY. See Oribasius (Synops. viii, 9); Haly Abbas (Theor. ix, 7, Pract. v, 25); Avicenna (iii, i, 5, 23); Alsaharavius (Pract. i, 2, 17); Rhases (Divis. 11.) COMM.

Although Theocritus had declared that neither ointment nor powder is of any efficacy for the cure of love, several of the ancient writers on medicine have given directions for the treatment of desponding lovers.

Rhases, with unusual brevity, merely recommends, in general terms, repeated enjoyment, fasting, walking, and frequent intoxication. Avicenna, Haly Abbas, and Alsaharavius direct nearly the same treatment; and also mention hunting and sports.

SECT. XVIII.—ON APOPLEXY, AND HEMIPLEGIA OR PARALYSIS.

When the common origin of the nerves is affected, and from it all the other parts of the body have lost their motion and sensibility, the affection is called apoplexy, by which the lead-

ing energies are impaired; but if the obstruction is in either side, it is called hemiplegia and paralysis; and if the injury is seated in any one part, it is called an affection of that part, and hence Hippocrates says, "His leg was seized with apoplexy."

Wherefore, in apoplectics, the respiration remains small. When, then, it is greatly perverted from its natural energy, it will induce a strong affection, and when but little, a weak one. Respiration is of the worst kind when it intermits, or is performed with great exertion. The affection arises suddenly from a cold phlegm obstructing the most important cavities of the brain. Whenever the whole origin of the spinal marrow is affected, all the parts below the face become paralysed, whilst it remains unaffected, because the parts there derive sensibility and motion from the brain; but, if one half only be affected, then is there a paraplegia of these parts, that is to say, a partial paralysis. If the sense of smell is affected, this arises from the anterior cavities of the brain having contracted the intemperament, or from the pores of the ethmoid bones being obstructed. Wherefore, apoplectics lie speechless, motionless, and insensible, without fever. The precursors of this affection are sudden and acute pain of the head, distension of the jugular veins, vertigo, flashes, as it were, of light in the eyes, an inordinate coldness of the extremities, palpitation and difficult motion of the whole body, and grinding of the teeth in sleep. Their urine is in small quantity, of a verdigris-green or a black colour, and containing a branny sediment. The affection occurs in old age to those of a phlegmatic temperament, and who use a diet of this nature. If it occur in youth and in the season of summer, it indicates a strong exciting cause.

The cure of apoplexy, and hemiplegia or paralysis. Apoplexy is an affection which is never or but rarely cured, for it threatens instant death; and if it be relieved, it commonly leaves a paralysis of some part of the body. Wherefore, those persons who admit of being cured should be immediately bled, and if there be any remission of the disorder, the operation should be repeated on the same or the following day. The belly should be opened by a stimulating clyster, made by mixing salt water and honey. Then let the whole body be rubbed with plenty of sulphurated oil, but the head with the oil of chamomile, or of dill in which cow-parsnip or calamint has been boiled. Inject honied

water, and apply strong-scented things, such as opopanax, sagapene, galbanum, or castor, to the nose. It may be necessary to open the mouth forcibly, and introduce a finger or feather dipped in oil to remove the matters sticking there. Anoint the anus with applications for promoting the discharge of flatus. Give honied water and oxymel to drink, and use masticatories prepared by boiling thyme, or marjoram, in vinegar. When there is a remission of the complaint, we are to have recourse to tender, diffusible, and succulent food. When loss of speech continues, if the strength permit, we are to apply to the back part of the head a cupping-instrument with scarificators, and, if admissible, it should be applied to the hypochondria also. Let them afterwards be carried about in a chair, or couch, or suspended bed, and have recourse frequently to sternutatories and masticatories. After the fourteenth day, we may bring them back to the other kinds of gestation, attend to their speech, give old apomel with pieces of bread or alica, and afterwards a small quantity of hiera. After the twenty-first day, we may lead them to the bath, give them old wine to drink; and otherwise we must promote recovery by sprinkling them with warm water, by baths, and rubbing with unguents. If possible, let them reside in places by the sea-coast.

The cure of paresis, or resolution. If there be paralysis of all or of certain members, without injury of the primary energies, we must first evacuate the offending humour, whatever it be, and then give hiera, and a certain portion of castor, beginning with half a drachm, along with some honey and warm water in which it has been dissolved, either alone, or with the addition of half a scruple of pepper; then, after an interval of four days, we may give a whole drachm, and afterwards one and a half, then two and three. After an interval of the same number of days, we may give four drachms, if the patient be able to take so much, adding one spoonful of honey. To the part we may apply some of the discutient remedies, along with rubefacients, adding to them some castor, or pepper, or pellitory, or rosemary, or euphorbium; and, in addition to these, we may have recourse to embrocations with oil of rue, or Sicyonian or old oil. The food ought to be farinaceous, taken in a slop, of easy digestion, and not excrementitious. Let cupping-instruments be applied to the affected parts separately, if there be many of them, but to one if there be few.

After cupping, apply cataplasms containing pitch, rosin, or manna. A most suitable application consists of calamint, fleabane, and nitre boiled along with mugwort, and some water is to be added, which is to be evaporated during the boiling. The belly is to be again opened by means of aloes, polypody, scammony, or the colocynth pottage. Fatty inunctions are to be made with old oil in which squill has been kept for forty days in the sun; or, if it be not at hand, you may boil in oil two ounces of squill, and anoint with it; or the seed of rosemary may be prepared in like manner, but an ounce of wax must be added, that it may not be too liquid. But, if you add of galbanum, of castor, of euphorbium, of adarce, and of nitre, of each, oz. ss, it will be a more potent remedy. The herb crowfoot, boiled in the oil, and preserved in the sun, is also an excellent application. Castor to the amount of a drachm, and opopanax swallowed to the size of a bean, will make suitable potions. But sagapene taken to the size of a tare in honied water, and castor with opopanax, and the Cyrenaic juice to the size of a millet, are admirable remedies. The antidote from the three peppers is also beneficial. We may likewise use heating restoratives (*acapa*), and masticatories. After the fourteenth day, we may give more copious food; and, when much benefit is derived, we may lead to the bath. After the thirtieth, it will be necessary to apply a dropax, use the bath, and afterwards put on a cataplasm of mustard, taking care in those cases in which both motion and sensibility are lost, lest from want of feeling they be allowed to burn too much. Where sensibility remains, rubefacients only are to be used. After it swells, we ought to lead to the bath, and cure with simple cerates. They ought to take the emetic after a meal, and that from radishes. They should be carried about in a chair, or in a car drawn by the hand, or in one drawn with a yoke. Otherwise, let them be put into one of the natural baths. A desiccative diet, spare drink, and friction will be proper. Let them, therefore, eat dry food, and struggle against thirst as much as possible.

On paralysis with relaxation or distension. Since paralysed parts are either contracted or relaxed, and this proceeds either from plethora or emptiness, it will be necessary to attend to this, and sometimes abstract blood, and sometimes not. *Again*, to relaxed parts we must mix astringents with the relaxing

remedies, and use intense friction; but for the contrary state we must use relaxing remedies only, along with gentle friction. For the relaxed limbs, let the oil used for friction have a little nitre and dried lees of wine pounded on it. Let hot water also be strongly poured upon them, especially sea-water, in which have been boiled bay-berries, or the shoots of the chaste-tree, or marjoram, or the like. If it is in the summer season, let them also swim in the sea. But rubefacients are particularly applicable to them, and therefore the parts may be whipped with rods, or nettle branches; but if the paralysis remain, the relaxed skin between the joints is to be drawn up, and transfixed with small and slender burning-irons. To contracted limbs it is proper to apply constantly a calefacient plaster.

On paralysis in particular parts. Paralysis occasioned by the division of a nerve is incurable; but when occasioned by an intemperament, or a certain humour, it is relieved by the common remedies already mentioned; but there are certain particular remedies applicable to each of them, which we shall describe below. Wherefore, in cynic spasms, the jaw is to be reduced to the opposite side by means of a muzzle. Detraction of blood from the vessels below the tongue will likewise be proper, as also cupping-instruments applied along the first vertebra, with masticatories, and purgatives administered by an instrument inserted into the nose. It is necessary to know that the jaw which appears to be distorted is not the one which is paralysed, but the opposite one. When the organ of deglutition is paralysed, cupping-instruments must be applied to the chin, and we must use the liniments made of castor, sagapene, and the Parthic juice. Acrid gargles are also beneficial. When the tongue is paralysed, we must open its veins, apply a cupping-instrument to the chin, and use masticatories of mustard, and exercise the tongue. When the organs of speech are paralysed, apply the remedies to the chest, enjoin retention of the breath, and have recourse to vociferation. When the eyebrows are affected, anointing of the eyelids in like manner is of great use, and, at last, the operation by suture called anarrhaphé. When the bladder is paralysed, there is either retention of urine or an involuntary discharge of it. The remedies are to be applied to the bottom of the belly and perinæum, and clysters injected by the anus, consisting of oil of rue, or Sicyonian

oil, with butter and castor, galbanum, opopanax, or the juice of laserwort. And these things, if injected into the bladder by the penis, will be of great service, or prove sufficient of themselves. Clysters of centaury and colocynth, along with Sicyonian oil, are also beneficial; and diuretics may be drunk with advantage, and castor taken in like manner. But, above all things, we must have recourse to the catheter when the patients cannot make water, and get them to sit in hot baths of a relaxing nature, and use emollient cataplasms. When the urine flows involuntarily, we must treat them upon the astringent plan with tonic remedies, and make them use dry food and cold drink. During convalescence they ought to use rubefacients, and natural baths in a cold state. Cases occurring from a wound of the spine, from a fall and dislocation of a vertebra, if there be a concurrence of fatal symptoms, it is impossible to remedy. If the penis is paralysed, we must apply the remedies recommended for the bladder to the same parts, and also to the groin; and medicines which excite to erections ought also to be used. Milk, cheese, and the other cakes are improper, likewise lettuces and the other pot-herbs. When the rectum is paralysed, in which case the fæces are either discharged involuntarily, or retained, the same remedies must be used, and clysters are to be administered, sometimes of an astringent nature, such as the decoction of cypress, of rush, or of bramble; and sometimes emollient; such as the fat of swine and geese, and the oil of mallows; and sometimes stimulating, such as salt water, the decoction of colocynth, or the like. Nothing contributes so much to motion as variety of exercise with the lever. If they complain of a sense of cold, the restorative plaster of euphorbium, dissolved in oil, may be used for a clyster. But, along with the ordinary treatment, the paralysed limbs should be bent, rubbed, and stretched in the manner described; for our greatest dependence is upon friction.

On paralysis supervening upon colic disease. In our times a colic complaint has prevailed, in which convalescents are seized with complete loss of motion in their limbs, but the sense of touch remains uninjured, there being a critical translation of the disease from the internal parts. Hence, in many cases, the motion has returned spontaneously in process of time. Those of more difficult cure were remedied by using the more simple

liniments formerly described. The acopa made of poplar and of the fir were found to be excellent applications; and many were greatly benefited by tonic and moderately cooling applications.

COMMENTARY. Consult Hippocrates (Aphoris. ii, 42, de Glandulis, et alibi); Galen (Comment. de Loc. Aff. iii, 11); Aretæus (Morb. Chron. i, 7; Cur. Morb. Acut. i, 4); Aëtius (vi, 26); Oribasius (Synops. viii, 14); Theophrastus (ap. Photii Bibliothecam); Alexander (x, 2); Actuarius (Meth. Med. iv, 2); Cælius Aurelianus (Morb. Acut. iii, 5); Octavius Horatianus (ii, 7); Leo (ii, 5); Nonnus (37); Avicenna (iii, i, 5, 12); Avenzoar (i, 9, 12); Serapion (i, 24); Mesue (de Ægr. Cap. 27; de Ægr. Nerv. 2); Haly Abbas (Theor. ix, 6, Pract. v, 22); Alsaharavius (Pract. i, 2, 18); Rhases (ad Mansor. ix, 3.) COMM.

To so many excellent works on apoplexy, wherein the subject is treated of fully and correctly, it is difficult to do justice within our narrow limits. We shall give, however, a brief, though imperfect outline of their opinions.

Hippocrates pronounces a slight attack of apoplexy to be difficult to cure, and a severe one to be utterly incurable. He says that an apoplectic attack is brought on by turgidity of the veins. When a person has suddenly lost his powers Hippocrates directs that he should be bled. (Aphor.) Apoplexy, he says, occurs most frequently between the age of forty and sixty. (Ibid.) He says, in allusion to apoplexy (as his commentator Theophilus remarks), that when persons in good health are suddenly seized with pains in the head, with loss of speech, and stertorous breathing, they die in seven days, unless fever supervene. (Ibid.)

Galen states that apoplexy arises from a cold, thick, and viscid humour obstructing the ventricles of the brain. He remarks that, in severe cases, all voluntary motion is lost while respiration is performed as in persons asleep. The reason which he assigns for this is, that the nerves which are distributed upon the respiratory muscles are all derived from the brain itself, and these often escape being injured, unless the attack be of a particularly serious nature. His account of cases of partial paralysis is highly interesting. (Loc. Affect. iii, 14.)

Celsus' brief account deserves to be given in his own words: "Attonitos quoque raro videmus, quorum et corpus et mens

COMM. stupet. Fit interdum ictu fulminis, interdum morbo : *'αποπληξιαν* hunc Græci appellant. His sanguis mittendus est : veratro quoque albo, vel alvi ductione utendum. Tum adhibendæ frictiones, et ex mediâ materiâ minimè pingues cibi, quidam etiam acres ; et a vino abstinendum." Respecting the treatment of paralysis he delivers the following aphorism : " Si omnia membra vehementer resoluta sunt, *sanguinis detractio vel occidit vel liberat :* aliud curationis genus vix unquam sanitatem restituit, sæpe mortem tantum differt, vitam interdum infestat." His other remedial measures are such as our author's, namely gestation, the application of cupping-instruments or rubefacients to the affected part, the warm salt-water bath, and a restricted diet.

According to Theophrastus, paralysis is occasioned by a deficiency or loss of the pneuma, i. e. vital heat.

It is impossible to admire too much the brief but comprehensive account of apoplexy and paralysis given by Aretæus. He states decidedly, that there is sometimes a loss of motion alone, and sometimes of sensibility ; the reason of which he supposes to be, that the sensatory and motory nerves are distinct from one another. This is the germ of the theory fully expanded afterwards by Galen. It appears, indeed, from the anatomical works of Ruffus, that the famous Erasistratus had attempted a similar classification of the nerves. Galen, however, has the merit of fully establishing the truth of the theory ; and all subsequent writers on physiology stated it in nearly the same terms that he does, until ancient authority in medicine and its cognate sciences came to be despised. Aretæus states it as a general rule, that when one side of the brain is affected the opposite side of the body is paralysed ; but, when the disorder is in the spinal marrow, that the affection of the spine and the paralysis are on the same side. This arises, he supposes, from the decussation of the cerebral nerves ; and this explanation must be admitted even now to be tolerably correct. The causes of paralysis, as stated by him, are falls, blows, cold, *indigestion,* debauchery, intoxication, and violent emotions of the mind. His treatment is as follows : He inculcates, in the strongest terms, that the great remedy for apoplexy is venesection ; and that the only difficulty, in general, is to determine the extent to which it is to be carried. He forbids the operation, however, when the senses are oppressed with much cold and torpor. When venesec-

tion is contra-indicated the belly is to be evacuated, in order to relieve congestion there, and to produce revulsion from the head. For this purpose acrid clysters are to be given, containing nitre, euphorbium, colocynth, turpentine-rosin, and the like. He also recommends hiera as a purgative; and if nausea be present, he advises us to encourage vomiting. He praises castor strongly as a remedy for the nervous affections. The food is to be light and of easy digestion. When the disease is protracted, cupping-instruments are to be applied to the back part of the head. When the parts concerned in deglutition, namely, the fauces and œsophagus, are paralysed, food is to be conveyed into the stomach by a suitable instrument. (By the way, Dr. Friend is mistaken in stating that Avenzoar is the only ancient author who recommends this practice. It will be remarked that our author makes mention of introducing food into the stomach by means of an instrument passed by the nostrils.) When the bladder is affected, he recommends injections, but forbids the use of the catheter, for fear of occasioning convulsions or gangrene. He approves greatly of the bath of oil in this case. COMM.

Aëtius, Oribasius, Alexander, Actuarius, and Nonnus treat of the disease in much the same terms as our author. Alexander, in particular, properly recommends moderate purging with the hiera and such like medicines. He restricts venesection to those cases in which the disease is occasioned by fulness of blood.

Cælius Aurelianus enumerates nearly the same causes of apoplexy and paralysis as Aretæus, namely, excessive heat, cold, indigestion, debauchery, and injuries of the brain. The season of winter is justly said to predispose to the disease. It is seated, he says, principally in the head. His treatment is nearly the same as that of the followers of Hippocrates and Galen, namely, emollient applications to the head and limbs, venesection, abstinence, clysters, cupping the back part of the head, and the bath of oil. Of paralysis he treats at greater length, and with much precision and judgment. He mentions nearly the same causes of it as of apoplexy; and remarks that it produces loss of sensibility, or of motion, or of both. He observes, in particular, of the tongue, that it may retain the power of deglutition although that of speech be lost. He details all the phenomena of partial paralysis with surprising accuracy; and, at the present day, we do not know a work on the subject that

COMM. contains so much information. He distinctly and accurately describes paralysis of the œsophagus and fauces. His treatment is, upon the whole, not very different from our author's; but his directions for the application of his remedies are exceedingly minute and judicious. In the first place, he approves generally of venesection, calefacient applications to the extremities, a spare diet, and afterwards of cupping with scarifications. When the tongue is affected, hot gargles of mustard and vinegar are to be given; and, when there is paralysis of the bladder, the catheter is to be used. When the disease is obstinate, he approves of hellebore as an emetic, and of calefacient plasters, depilatories, cupping with much heat, embrocations of mustard, and such things as will produce a papular eruption, namely, flour of salt, nitre, and the like. He blames Praxagoras for recommending emetics indiscriminately, and Erasistratus for omitting venesection. He finds fault with Themison for being in too great haste to apply stimulants to the affected parts, and for having recourse to cupping before the disease had begun to subside. Though he permits the occasional use of hellebore, he disapproves of purgative medicines in general. For paralysis of the œsophagus he recommends us to apply a cupping-instrument, leeches, or cataplasms to the neck.

Little additional information is to be got from the Arabians; and yet Avicenna, in particular, has treated the subject in a very masterly manner. The causes of apoplexy, he says, are either obstruction or repletion; and these are produced either by blood or a pituitous humour. We need scarcely remark that this accords with the modern division into sanguineous and serous apoplexy. Even in pituitous apoplexy he admits of venesection. He approves of vomiting when it can be produced easily. Neither Serapion nor Avenzoar makes mention of venesection. Serapion commences his treatment with an emetic. When connected with plethora, Alsaharavius recommends general bleeding, opening the temporal veins, cupping the legs, restricted diet, applications to the head, such as oil of roses and vinegar, and acrid clysters. Haly's account is minute and judicious. He attributes the affection to obstruction within the brain occasioning a loss or diminution of the powers of sensation or of voluntary motion. It is produced, he says, by phlegm mixed with bile or blood; and sometimes arises from

repletion with wine, which case generally proves fatal. He justly remarks, that one of the most common symptoms is stertorous breathing. If the face be ruddy or livid, he directs us to open the cephalic vein, or vena saphena, and abstract blood according to the patient's strength; to apply ligatures to the extremities, vinegar and rose-oil to the head; and to give clysters. He also approves of emetics. When the disease has partly subsided, he approves of the bath. He treats separately of paralysis, describing many varieties of it. In paralysis of the face he recommends stimulant liniments, ligatures, gargles, and sternutatories. According to Rhases, apoplexy arises from congestion of blood or of viscid phlegm in the brain. He remarks correctly, that when attended with stertor it is difficult to cure. When the memory is affected, he directs us to apply a sinapism to the occiput. COMM.

The paralysis of the extremities after colic, mentioned by our author, and after him noticed by Avicenna and Haly Abbas, was, no doubt, the same disease as the palsy after colica pictonum described by modern authors. De Haen has given a masterly description of this disease. (Rat. Med.)

Rhases states decidedly that the skin of paralytics may retain its sensibility, although the muscular motion be lost. In a word, he maintains that the nerves of sensibility and motion may be affected separately. He remarks, however, that a part can scarcely retain its powers of motion when the sensibility is entirely gone. He says that he had known several cases of paralysis cured by a natural diarrhœa. His general remedies are bleeding, purging, and rubefacient applications. He, and several of the authorities referred to by him, recommend the warm salt-water bath for the cure of paralysis.

SECT. XIX.—ON CONVULSIONS, OR SPASMS.

The consideration of spasms naturally follows that of paralysis, because both are affections of the nerves; and, for the same reason, we shall next treat of tremors. When, therefore, spasms come on at the commencement of the complaint, or nearly so, and are protracted, they have their origin in plethora; but when they supervene after copious sweatings, vomitings, dis-

charges from the bowels, hemorrhages, watchfulness, hunger, or much and violent exercise, they proceed from depletion. If they suddenly attack a person in health, they must necessarily proceed from plethora. But when from ardent fevers the nerves and whole body are dried, and then spasms come on owing to the dryness, this is one of the worst possible cases, and is almost incurable. Wherefore, we must, in the first place, bind gently the limbs which are contracted, and resist their inordinate motions, and rub them with oil of rue, Sicyonian or old oil, or the like; and the patients must take propomata of honied water. In convulsions from depletion, warm oil, or oil and water, are to be poured upon the patients, and if nothing contra-indicate, they may be put into a bath. We may use a tepid hip-bath with oil, and the gentlest friction. For food, they must take spoon-meats of chondrus and alica; and we may allow them a thin watery wine of easy diffusion if they have no fever. Then we must use the juice of ptisan and promote sleep. Spasms occasioned by plethora or inflammation, we may cure by diminishing the fulness, and removing the inflammation by suitable remedies. Spasms come on also during the agitations of violent vomitings, which cases are benefited by drinking infusions of the root of cotton-thistle, or of the white thorn, or of the Egyptian thorn; but some give the juice of the slender centaury to drink when the convulsions arise from plethora; and one should not only drink it, but rub the skin externally with castor and Sicyonian oil. If they do not cease, cupping-instruments, with scarifications, should be applied; when the legs are affected, along the ischium and the last vertebra; and when the arms are convulsed, to the back, to its first vertebra, and the one above the shoulder. When the rest of the body is not affected, but one of the lips, eyebrows, or tongue, is contracted, the symptom is to be reckoned dangerous and alarming, although the parts affected be but small in size. Wherefore you must abstract blood from the hind-head, and from over the first vertebræ.

COMM. COMMENTARY. See Hippocrates (Aphor. v, 70); Galen (Comment.; de Loc. Aff. iii; Meth. Med. xii); Celsus (ii, 1); Cælius Aurelianus (Morb. Acut. iii, 6); Aretæus (de Morb. Acut. i, 6); Leo (ii, 17); Nonnus (38); Octavius Horatianus

(ii, 10); Aëtius (vi, 38); Oribasius (Synops. viii, 16); Avicenna (iii, 2, 5, 6, 7); Serapion (i, 27); Avenzoar (ii, 3, 16, and i, 10, 3); Alsaharavius (Pract. i, 2, 21); Rhases (Divis. i, 16, and Contin. i.) COMM.

Aëtius and Oribasius treat of spasms in nearly the same terms as our author. We shall give an account of the doctrines of Aretæus and Cælius Aurelianus in the next section. The principles of our author's treatment are mostly derived from Galen. The Arabians adopt his views without the slightest modification.

SECT. XX.—ON TETANUS AND ITS VARIETIES.

Tetanus also, being a spasm, takes place from the muscles of the body, and more particularly those about the spine, being as it were congealed by a cold humour, fixing both within and without; and hence they are incapable of bending themselves. But when the parts of the body are bent forwards, the affection is called emprosthotonos; when backwards, opisthotonos; and, when the parts are stretched equally both ways, the affection is called tetanus. Pelops says that these affections consist of a tension and contraction of the muscles and nerves about the neck, by which stooping, nodding, and turning of the head are performed; that if the affection be seated in the posterior muscles of the neck, the disease is, from this circumstance, called opisthotonos; when in the anterior, emprosthotonos; and if both are affected, tetanus. The cause, he says, is a flatus, and thick and nebulous air filling the muscles. He says that it is very cold and congealed, and that this is the cause of the difficulty of motion; and that, therefore, dry fomentations, and not moist, are most suitable to them. And these are the varieties of tetanus. "But," he adds, "the cure of all is the same, and does not change with the varieties. Wherefore, the most potent remedy for them all is a fever supervening, when there was none at the commencement." The symptoms are a moaning respiration, pulse rare and small, and sometimes a sardonic laugh comes on; the face is red, and their eyes appear larger than natural; their urine is either wholly suppressed, or it resembles common water, or is somewhat bloody, and contains certain bubbles; the

belly is dried up; they cannot sleep; and often, from the violence of the spasms, they are in danger of falling out of their beds; they sometimes have singultus, and pains in the head, or between the shoulders and loins; and some have tremors. The disease is occasioned sometimes, though rarely, by fatigue, by lying upon the ground, lifting of weights, a fall, a wound, a burn, and a blow, or any other thing which can bring on such an injury of the nerves. The disease is to be cured like convulsions from depletion.

The cure of the varieties of tetanus. In treating tetanic spasms, we must begin with phlebotomy, and wrapping the parts in wool which has been dipped in oil, namely, the Sicyonian and castor with old oil; or a broad bladder containing hot oil may be applied to the tendons. Cupping, with scarifications, is to be applied; for dry cupping is hurtful. The neck, both sides of the spine, the muscular parts of the breast, the hypochondria, and the region of the bladder or kidneys, should be cupped. We must not be sparing of the detraction of blood, nor yet take away too much at a time, but at intervals. The sweats should be absorbed by the wool dipped in oil, lest the patient happen to catch cold. If the attack of tetanus continue long, the patient must be put into a hip-bath of oil twice a day, but not allowed to remain long in it; for, of all applications, the bath of oil is the most debilitating. Let him drink tepid hydromel boiled to the one half; and the robust may take a drachm of opopanax; or, if not so much, three oboli, or at least one obolus, if we are afraid of its proving injurious to the stomach. We must also give gum ammoniac; or the Cyrenaic juice, to the size of a tare, made up with well-boiled honey, may be swallowed. Two spoonfuls of the root of laserwort may be given in three cyathi of honied water, or in its decoction; or one drachm of myrrh, in honied water, or the decoction of hyssop. But the least dangerous and most effectual remedy is castor, to the extent of two or three spoonfuls, in divided doses. And it will do no harm, if you give it after a meal; but the drink and the other things should be taken slowly and by degrees; for if swallowed with difficulty, the drink regurgitates at the nose, the violent agitations of which bring on convulsions. The anus should be smeared with oil of rue, along with opopanax, and the same things are to be given in a clyster. The affusion of

cold water being, as Hippocrates says, exceedingly hazardous, and, for that reason, I suppose, rejected by succeeding authorities, we too are disposed to condemn.

A liniment. Of nard (valerian), one sextarius; of wax, oz. ij; of malabathrum, of amomum, of storax, and of mastich, of each, oz. j; of castor, of adarce, of euphorbium, of pepper, of each, oz. j; of spikenard, of opobalsam, of each oz. j.

A potion for opisthotonos. Of the root of panacea, of white pepper, of costus, of myrrh, of poppy juice, equal parts. Give to the size of the vetch called *aracus* at bedtime. It is also a remedy for orthopnœa. Let the diet be attenuant, of easy diffusion, and by all means not excrementitious.

COMMENTARY. Consult all the works referred to in the preceding Section; also, Celsus (iv, iii)); Haly Abbas (Theor. ix, 10, 11, Pract. v, 31); Alexander Aphrodisiensis (Prob. i, 53.) COMM.

Hippocrates, Plato, Galen, Horatianus, and Avicenna agree in stating that a fever coming on tends to remove the tetanic affection. Cælius Aurelianus seems to question the truth of this ancient aphorism. According to Hippocrates, tetanus generally proves fatal within four days, or, if not, recovery takes place. He disapproves of the cold affusion in cases of traumatic tetanus (Aph. v, 21); Alexander Aphrodisiensis, however, speaks rather favorably of it.

Aëtius, Oribasius, and Nonnus, like our author, recommend bleeding, emollient fomentations, and the bath of oil. Archigenes (ap. Aëtium) directs the bath to be prepared by adding a fifth part of oil to the water.

The treatment recommended by Celsus is judicious and not unlike our author's. He expresses himself hesitatingly about venesection, and forbids the early use of wine. He approves of opening the bowels.

Aretæus says that tetanus is a painful spasm, sometimes proving speedily fatal, and always difficult to cure. Like the moderns, he mentions the three varieties of it, namely, emprosthotonos, opisthotonos, and tetanus. The disease, according to his account, may arise from a variety of causes, such as a wound of a muscular or nervous part, abortion, and excessive cold. When it arises from the two causes first mentioned, it is said to be generally fatal. His description of it is given in his usual

COMM. graphic manner. He advises the physician not to compromise himself by meddling with the case when the disease is fairly established. His treatment is altogether soothing and relaxant. He recommends us to lay the patient upon a soft warm bed, and, from whatever cause the complaint arise, to begin with abstracting blood from the arm. Then soft liquid food is to be given, and the whole body wrapped in wool moistened with some calefacient oil; or bladders half filled with tepid oil are to be applied to the parts most affected. He directs us to cup the back part of the neck, but cautions against exciting irritation by the application of heat. To the wound he recommends suppurative applications containing frankincense, turpentine-rosin, and the like; for he remarks (and the fact is confirmed by the experience of the late M. Larrey, who recommends a similar mode of practice) that, when tetanus supervenes, the sore becomes dry. He praises castor and assafœtida as antispasmodics; and, if these cannot be swallowed, they are to be given in an injection. He advises also hiera to be given in an injection.

Cælius Aurelianus enumerates nearly the same causes as Arctæus, and describes all the symptoms of the disease with the greatest precision. His treatment also is nearly the same as that of Aretæus, namely, emollient applications to the neck, venesection, and oily clysters. He even enjoins the bath of oil, which has fallen into disuse in modern practice, most probably solely on account of the expense with which it would be attended. He also permits sometimes the use of the common bath, but not of cold water. He allows wine in certain cases. He condemns Hippocrates for giving both wine and emetics, and having recourse to venesection, without due discrimination. He blames him also for recommending the affusion of cold water, inasmuch as he himself had pronounced cold to be injurious to the nerves, bones, &c. Galen, however, remarks, in his Commentary upon this Aphorism of Hippocrates (sect. v, 21), that cold, in this case, is not the direct cause of the benefit derived from this remedy, but (if we understand him right) that the shock which it imparts to the system proves beneficial, by rousing the vital heat and energies of the patient. Hippocrates, however, as stated above, forbade the cold affusion in traumatic tetanus. Our author's opinion of this practice is just such as

the profession in general now entertain, after it has received another trial upon the recommendation of the late Dr. Currie. (See 'Medical Reports,' and Larrey's 'Mémoires de Chirurgie, t. 1.)

Octavius Horatianus recommends bleeding, emollient applications, purgative clysters, the tepid bath, antispasmodics, and *soporifics*. The use of the last-mentioned class of remedies does not appear to have been sufficiently understood by the ancients; at all events they were less partial to them in this case than the moderns.

The Arabians enjoin nearly the same treatment as the Greeks. Avicenna and Mesue join the preceding authorities in recommending strongly the use of castor and assafœtida as antispasmodics. Avicenna, like all the others, praises the bath of oil. Serapion speaks of a bath prepared with emollient herbs. Haly Abbas describes minutely the two varieties as occasioned by repletion and inanition. For the former, he approves of purging with hot drastic purgatives, of rubbing the part affected with hot oils, and of using the warm bath with friction after it. He also approves of castor. For the other variety, he praises the affusion of plain water in which lettuces, barley, &c. have been boiled. He recommends the internal use of milk and other demulcents, and the bath of oil, and rubbing the body with oil of violets. The treatment recommended by Alsaharavius is very similar. Rhases mentions Hippocrates' proposal of the cold affusion; but, like our author, he rather disapproves of it. He himself recommends bleeding, when there are symptoms of repletion, emollient applications to the neck, the bath of oil, the application of leeches to the part affected, purging with aloes, &c. and the administration of antispasmodics, such as castor, assafœtida, and the like.

SECT. XXI.—ON TREMBLINGS.

Trembling is generally occasioned by a weakness of the nerves (old age is a proof of this); but there are many particular causes which occasion it; for it arises from a cold intemperament, from draughts of cold water, more especially if taken unseasonably during a fever, also from a redundance of cold and viscid

humours, and from the too liberal use of wine. Those, therefore, who have tremblings from any obvious error in regimen, must abstain from the things which prove injurious to them. And, again, when the tremor remains during fevers, we must first rub the body with Sabine oil; but in the remissions of the attacks with old or Sicyonian oil. Let the extremities after being anointed, be wrapped in soft wool, and then let cupping instruments be applied along the spine, from the first vertebra to the loins; these parts, together with the hypochondria, being previously covered over with raw barley-meal. Let them also be wrapped with wool out of old or Sicyonian oil. But if the fever continue, every alternate day let them be put into a hip-bath of oil, or oil and water, and use soft frictions. But if the affection be prolonged, and cold is suspected, they should take a propoma, or sweet potion, of honied water and castor, and be carried about in warm places; and we ought to give them food of easy distribution, at first spoon-meats, and afterwards such fowls and fishes as have tender flesh. When the fever is gone, they must be washed, avoiding the cold bath and wine. But, if there be a fulness of thick and viscid humours, we must use remedies of an incisive and attenuant nature. They are these: Of the shoots of rue, of cow-parsnip, as much as can be contained in three fingers; of castor, of nitre, of each two oboli. Give every day one spoonful with oxymel, for three days while fasting; or of panacea and pepper, five grains; take in a draught of a cyathus of honied water. The following simple things in proportion relieve tremors: Castor, the brain of a hare eaten, the decoction of the root of marshmallows, of the leaves of water plaintain, dr. iv, in honied water, hemp agrimony with water. When the cold prevails, we may use the liniment of Zosimus, and the restoratives, liniments, and rubefacients described above for paralysis, also exercises and frictions. Those who have tremblings from drinking wine must abstain from wine altogether, until a complete cure take place.

COMM. COMMENTARY. See Galen (de Tremore, et alibi); Nonnus (40); Cælius Aurelianus (de Morb. Acut. iii, 7); Mesue (de Ægr. Cap. 5); Serapion (i, 3); Haly Abbas (Theor. ix, 11, Pract. v, 32); Alsaharavius (Pract. i, 2, 24); Rhases (ad Mansor. ix, 8.)

Galen, in the work referred to above, explains the rationale of this affection with his usual penetration, but at too great length to allow of our entering upon an exposition of it. The others treat of it similarly to our author. Thus Haly Abbas mentions various causes of tremors, such as old age, drinking cold water unseasonably, excessive indulgence in wine or venery, inanition, and the like. He recommends aloes and castor, the hot bath, friction with calefacient oils, and other such remedies. Serapion gives a sensible account of the nature of the affection, and recommends fetid or antispasmodic remedies internally, and friction with calefacient oils externally. When it is occasioned by exposure to cold, Rhases recommends the hot bath and insolation. We may mention here that Hippocrates has given a very accurate history of a case of *delirium tremens*. (Epid. iii, 5.) COMM.

SECT. XXII.—ON DISEASES OF THE EYE; AND FIRST OF PAIN, FROM GALEN.

When violent pains in the eyes take place, consider from what diathesis the eye happens to be pained in the inflammations; for they are either occasioned by the pungency of an acrid defluxion, or from the coats being over filled and stretched, or from the distension of thick humours or of flatulent spirits. When the pains proceed from pungency, they are to be cured by evacuating with purgatives, and by injecting into the eye the white of an egg. When the inflammation is concocted, if the body be free of impurities, the most befitting remedies are baths. Inflammations from plethora are to be cured by the detraction of blood, purging the belly, and applying friction to the inferior extremities. Those from distension are to be cured by first evacuating the whole body, then by occasioning a revulsion downwards of the humours, and afterwards by using topical applications of a discutient nature. The eyes must be fomented, and the decoction of fenugreek poured into them. When the vessels of the eye are distended with thick blood, while there is no plethoric diathesis in the general system, the patient must drink wine which has the power of heating, evacuating, and removing obstructions.

On disorder of the eye, and particularly of ophthalmy. Dis-

order of the eye is a wateriness and heat of it, with preternatural redness, not occasioned by any cause within the body, but by some external one, such as the sun, smoke, dust, or the wind; wherefore it is soon dispelled when the cause is removed. And ophthalmy is a marked disorder, which may be occasioned not only by an external cause, but also without any obvious one, and remains until the third, fourth, or fifth day. It is best cured by avoiding every external exciting cause, by spare diet, drinking water, walking, and by opening the belly.

On inflammation. When inflammation remains in the eyes after evacuation of the general system, we may use ointments for dispelling the rheum, and soothing the irritation, such as the collyrium of Nilus made from roses, the chiac, or the collyrium from nard. When the tunica adnata is inflamed, we may use the collyria called monhemera, injecting them into the eye with the white of an egg. Next day, if the inflammation be not aggravated, we may anoint them with the collyrium of nard, and use a fomentation of the decoction of melilot and fenugreek. When the humour which occasions the ophthalmy is thick, we may use medicines which are neither obstruents nor incrassants, but which, on the contrary, will dissipate, dilute, and evacuate the humours, such as the chiac collyrium. But, if the humours are impacted in the head, we may fix a cupping instrument to the hind head, or scarify, or apply leeches to the forehead, near the eye affected. We must use cataplasms of pure bread soaked in water, with a little rose-oil, or polenta boiled in the decoction of poppy-heads also with rose-oil. We may also use a more efficacious cataplasm from saffron, melilot, the fleshy parts of dates, the tender leaves of coriander, eggs, and roasted wheat and crumbs of bread dipped in a decoction with a small quantity of rose oil, in a decoction of pounded poppy heads. We mix also the seed of the poppy as an anodyne. If compelled by the severity of the pain, we must add a little opium; but, unless the pain be very violent, we must abstain from all narcotics. If the inflammation be moderate, apply aloes by itself, or rub it in with water or the white of an egg. In order that the remedy may be ready for use, take of saffron, dr. vj; of aloes, dr. xvj; of gum, dr. ix; mix with rain water, and make a collyrium. And the saffron collyria, as they are called, are proper for the commencement of ophthalmies. In those cases

in which there is an œdematous and white swelling about the eyebrows and tunica adnata, without injury of the coats, the best applications are those called liquid collyria, prepared from saffron, copperas, and honey. And this one is excellent:

A liquid anodyne collyrium. Of the melanteria used by tanners, of Attic honey, of the juice of fenugreek, equal parts. Boil to the thickness of honey, and touch the two angles of the eye with it, by means of the rounded extremity of a specillum or probe.

For a copious defluxion. For a flow of humours, in the commencement abstinence from food is proper, and the drinking of water, and most especially abstinence from venery; the belly should be opened, and the face washed with a watery oxycrate, if the rheum be of a hot nature; but if otherwise, the forehead and eyebrows may be anointed with copperas and honey. Some dissolve the copperas in water, and bathe with it. In defluxions without inflammation, or with inflammation, but so that the affection is seated above the skull, we must use agglutinative applications to the forehead, either simple ones, such as green vine leaves, or the juice of the bramble, or of purslain, or of quinces with some fine polenta, or with gall levigated in wine, or with fine polenta or hemlock, or flea-wort with water, or nightshade, or snails with their shells pulverized, and applied from temple to temple, and, in a word, with things of an astringent and cooling nature, or with the following compound applications: Wheat flour, and myrrh or frankincense, with the white of an egg, may be rubbed in; or Samian earth, with myrrh and manna, in like manner, with the white of an egg; but in colder defluxions, of native sulphur, of bitumen, of pitch, of colophonian rosin, of each, dr. ij; also the trochisk of Musa, that called aster, and the like, are suitable repellents. And the theriac, dissolved in an astringent wine, and rubbed on the forehead, stops cold defluxions, and may be drunk with great advantage. Over the eye apply wool, or a small rag wet in the white of an egg; and new-made cheese, in like manner, when applied to the eye, restrains acrid defluxions in particular; also the astringent collyria, as they are called, when rubbed in or injected into the eye in a watery state, do the same thing. But if the humour be deep-seated, and below the skull, and if fixed there for a length of

time, after the general evacuations use errhines and masticatories, shaving the head, and applying rubefacients to it. But to these must be joined the surgical operations for the head, namely, Angiology, Arteriotomy, Hypospathismus, and Periscyphismus, with burning at the vertex down to the bone. But cupping instruments, with scarifications applied to the hind-head, will produce a revulsion of the defluxion. The symptoms of defluxions external to the skull are distension of the vessels of the forehead and temples, forming, as it were, a band to the head, and the complaint being remedied by agglutinative applications of a desiccant nature. When these symptoms are not present, and the defluxion proves of long duration, and sometimes is exasperated by sternutatories, the humour is to be supposed seated below the skull.

On chemosis. The disease is called chemosis when both the eyelids are everted in consequence of a violent inflammation, so that the eyes are scarcely covered by them, and the white of the eye is elevated above the black, is red, and occupies a large portion of the black. We must cure it by phlebotomy, purging, the white collyrium of roses, and the spodiac, with milk, or the white of an egg, and we may anoint the eyelids, temples, and forehead with the same, and have recourse to paregoric fomentations and cataplasms. When the inflammation begins to remit, we may rub in the more acrid applications, such as the green one from roses.

On hyposphagma and emphysema. Hyposphagma is a rupture of the veins of the tunica adnata, occasioned most frequently by a blow. Bathe the eyes with the blood of the wood-pigeon, or of the common pigeon, or the warm milk of a woman in which a little frankincense has been triturated, and inject brine, more particularly that from Cappadocian salts, and use a fomentation from the decoction of hyssop. Swellings about the eyes from blows are remedied by repeated fomentations with oxycrate, or a sponge out of oxycrate may be applied to them, or a liniment may be used, consisting of equal parts of burnt lapis specularis, and pigeon's dung, triturated with wine or vinegar. Or a cataplasm may be applied of new cheese, or of the rind of radishes, or of dried grapes without the stones. Each of these is to be mixed with oxycrate or honied water. The same remedies apply also to emphysema.

On prurient emphysema and psorophthalmia. Emphysema is an œdematous swelling of the eyelids; but psorophthalmia is a scabious eruption of the eyelids attended with pruritus, arising from a saltish and nitrous humour. They are remedied by oxycrate, the decoction of lentils, and a fomentation of roses. The following is a liquid collyrium: Of copper, dr. vj; of calcined misy, and myrrh, of each, dr. iij; of saffron, dr. iss; of pepper, dr. j; of Chian wine, and Cretan sweet wine, of each $1\frac{1}{2}$ cyathus; boil to the thickness of honey. This is the collyrium of Erasistratus called panchrestos, which applies to cynanche, ulcers in the mouth, and on the privy parts, and to the earache. They are to be rubbed with oil into the patient's eyebrows when he is going to sleep. Acid, saltish, and acrid things are to be abstained from.

On sclerophthalmia and xerophthalmia. Sclerophthalmia is a hardness of the eye with difficulty of motion, pain, and redness, without wateriness. For this the eyes are to be fomented frequently with sponges out of hot water; and at bedtime the white of an egg with rose-oil, or the fat of geese, may be applied to the eyelids. Let them avoid everything of a cooling and hardening nature; let the head be covered and anointed, and the belly kept open. Xerophthalmia is a pruriginous affection of the eyes without rheum. It is to be cured by baths, unguents, and a wholesome diet. Applications of an acrid nature are suitable to both, as they promote a flow of tears, by which the hardness will be softened, and the dryness rendered more humid. Such are the panchrestos of Erasistratus, and those called dicenteton and stratioticum.

On ectropion, or eversion of the eyelids. This complaint is an eversion of the eyelid, occasioned either by a scar or fungous flesh. When it is occasioned by fungous flesh, and is of long duration, roast scraped verdigris, pulverise it and apply, or use burned lead washed with sulphur vivum, or apply both in equal parts, namely, the verdigris and the lead. Ectropion from a cicatrix, if at all remediable, must be cured by a surgical operation.

On ægilops and anchilops. Ægilops is an apostеme between the great canthus of the eye and the nose, which breaking and being neglected, ends in a fistula that extends to the bone. Before the apostеme breaks out into an ulcer, it is called an-

chilops. A very good application is horned poppy and saffron, applied with the juice of perdicias (*pellitory of the wall?*) They must be frequently changed, and till then it will not turn to pus.—*Another:* Alica, boiled in vinegar and properly triturated, not only cures the disease at the commencement, but, after suppuration, it bursts the abscess and penetrates to the bone. By using it, you may cure not only ægilops but anchilops.—*Another:* Garden rue, levigated and boiled with protostactos and applied, answers excellently for ægilops, penetrates to the bone, proving stimulating at first, but afterwards not so; and, what is wonderful, it does not leave an ugly scar. —*Another:* Pulverize snails with their shells and apply them; and sometimes aloes or myrrh may be added before the ægilops is converted to pus; and after the abscess bursts it dries up the pus.

On trachoma. Trachoma is a roughness of the inner surface of the eyelid, an intense degree of which has the appearance of clefts, and is called sycosis. When it becomes chronic and callous, it is called tylosis. We must use collyria for it, namely, the one from wine, and that prepared from the two stones; or the eyelid may be rubbed with the bloodstone itself (hæmatites,) much washed in water. But the collyrium called harmation, with a little of the cycnarius, or the saffron collyrium, answer well with these, and with cases of psorophthalmia without ulceration, when rubbed upon the everted eyelid. But if the callus be hard and do not yield to these things, we must turn the eyelid out and rub it down with pumice-stone, or the shell of the cuttle-fish, or fig-leaves, or by the surgical instrument called blepharoxyston.

On chalazion. Chalazion is a concretion of an indolent humour in the eyelid, for which pound ammoniac with vinegar, and anoint along with galbanum. It likewise has a good effect when joined with cerate and turpentine.

On hordeolum, or stye. Hordeolum is a small oblong aposteme on the tarsus of the eyelid. We may foment it with white wax; or throwing away the head of a fly, we may rub the part with the rest of its body; or wash with the decoction of barley.

For lice in the eyebrows. Having first cleared away the pediculi, wash the part with tepid sea-water, and use the under-

mentioned application to the tarsus: Of fissile alum, two parts; of stavesacre, one part; triturate, and use.

On madarosis, or milphosis. This affection is a falling off of the hairs of the eyelids. Wherefore, after attending to the general health, use the detergent ointments called calliblephara. Of Cannel-coal, of Celtic saffron, of ladanum, equal parts; pulverize, and use.—*Another*: Of antimony, calcined and cleaned, dr. j; of lead, burned and cleaned, dr. iv; of saffron, dr. iv; of Indian nard, dr. iij; pulverize, and use.—*Another*: Of the burnt bones of dates, dr. iij; of Celtic nard, dr. ij; pulverize, and use. This also cures scabious eyes.

That of Neopolites for milphosis and chronic affections of the eyelids. Of antimony, of cadmia, of chalcitis, of foreign misy, of each, equal parts; beat together coarsely, mix with honey; when roasted, triturate, and use.

On ptillosis. Ptillosis is a callous thickening of the eyelids, of a red colour, and often accompanied with a falling out of the hair. In addition to those already mentioned, the following is an excellent application: Rub with mice dung burnt, and triturated in honey.

For a falling off of the hairs of the eyebrows. Anointing the fingers with oil, or geese fat, rub them upon lead, and anoint with this.—*Another*, which also darkens the hairs: Triturate burnt Pontic walnuts with the fat of goats or of bears.—*Another*, which also applies to alopecia of the chin: Of henbane, dr. ij; of mice dung, dr. j; of maiden-hair, dr. j; of the ointment of iris, four spoonfuls. Pound well together, mix the ointment, and, having first fomented, anoint. If you previously shave the part, it will be the more efficacious.

For trichiasis of the eyelids. Having first torn out the hairs which irritate the eye, anoint the part immediately with the blood of a frog by itself, or with the ashes of white chameleon, or the blood of bugs; or the juice of the fumitory, which grows among barley, mixing it with gum, or the ashes of pickled limpets with cedar rosin (*gum vernix ?*), or the ashes of the lotos; or liquid alum, called *phorimum;* or the blood of a tick taken from a dog. It is very efficacious.

Agglutinative medicines. The following substances agglutinate the hairs when bent inwards: Bitumen, mastich, colophonian rosin, glue, the glutinous part of snails.

On encanthis and rhyas. Encanthis is an excrescence of the natural flesh at the great canthus, but rhyas is a wasting of it. You may treat encanthis with the remedies mentioned for ectropion, and similar caustic, or septic applications; but the whole substance must not be consumed, lest rhyas be produced, for it must only be reduced to its natural size. Rhyas, when the whole flesh is consumed, either by an awkward surgical operation or medicines, is incurable. But if part of it only be lost, you may restore it by moderately astringent and incarnating applications, such as that from saffron, horned poppy, and aloes; and the saffron collyria, and henbane boiled in wine and applied, and a small quantity of alum with wine.

On ulcers. Of the ulcers in the eyes there is but one genus, but many particular species. For that in the cornea, when hollow, narrow, and clean, is called bothrion. That which is broader than the bothrion, but less deep, is called cœloma. Argemon is the name given to that which arises on the circle of the iris, but affects the surrounding parts, so that the part which is on the external side of the iris is red, but that on the internal white. Epicauma is a foul and impure ulcer with eschars, which, when cleaned away, often give vent to the humours of the eye. There are many other varieties of ulcers, all of which we shall treat of in general terms. If, therefore, the ulcer happen to be attended with inflammation, the cure must be accomplished by such things as are calculated to soothe and digest the inflammation, regard being had to the peculiar nature of the ulcer. Such are the collyria, called *libanium, cycnos,* and *palaria, aster,* and the like; and those from starch, Samian earth, and ceruse. But the most sedative collyrium which we are acquainted with is that of Nilamon; and yet we must not persevere long with it, because it is very narcotic. The best of all applications is the collyrium from decoctions not possessed of a narcotic quality. But if the ulcer be attended with a rheum, we must mix some of the collyria for it, such as that from the *hydra,* the *chiac,* the yellow *cycnos,* and such as possess repellent properties without being stimulant. When the ulcers are foul, we must use honied water moderately diluted, and the decoction of fenugreek, by themselves, and along with the collyria for that purpose; when they are acrid, we may use that of Severianus with the diachylon from fenugreek; when not acrid,

those from myrrh and nard. When the ulcers are cleaned, they may be cicatrized by means of the collyrium called *cleon*, in addition to which it will render the scar of the same colour.

On procidentia. Procidentia is a projection of the coat called uva (*iris?*), formed by an ulceration or rupture of the cornea. When, therefore, it is small, so as to resemble the head of a fly, it is called myocephalon. When it increases more, so as to resemble a grape-stone, it is called staphyloma; when it advances far forward, so as to protrude between the eyelids, it is called melon; and if it has become callous, it is called clavus. If, therefore, the projection is small, like the head of a fly, we must use repellent and astringent applications, such as the chian, that called *fuscum*, the *nard*, and the *theodotian*, and those from olive leaves, and from horn. And we must bind upon them without pressure a piece of sponge which has been soaked in oxycrate, or astringent wine, or the decoction of roses, or the compress called splenium may be used. The best application for procidentia, and all ulcers of the eye, is the collyrium called *olympiac* or *olympus*, with the juice of olive, or of knot-grass, or of poley. The same things are applicable to clavus and staphyloma, before they whiten; for after they become white and callous, they are incurable.

On hypopyon. Hypopyon occurs occasionally in the cornea, being sometimes deeply seated, and sometimes more superficially, the matter assuming the shape of a nail, and hence the affection has got the name of onyx. The indication of cure is either to dispel the pus by remedies possessing this property in a moderate degree, such as honied-water, and the juice of fenugreek, and the collyria formed from it, the libyanum, and those from frankincense; or to make it burst, and cleanse the ulcer by means of the more potent remedies, such as those called *diasmyrna* and the *hygidian*. For cases of hypopyon without ulceration one may use the following liquid collyrium: Of copperas, and of saffron, of each, dr. viij; of myrrh, dr. iv; of honey, lb. j. The phlyctæna, which is an elevation of the cornea, by a certain humour corroding its fibres, yields to the same treatment as hypopyon.

The liquid collyria of Bassus for hypopyon. Of saffron, of aloes, and of myrrh, of each, oz. j; of wine, oz. iij; of the finest honey, oz. vj. The saffron is to be levigated with a small quantity of the wine, then with the aloes and myrrh; and when it

thickens, add the honey, and having mixed together, lay up in a glass vessel, and use twice a day, or, if the case be urgent, three times. It at the same time cleanses the eye and proves incarnating and cicatrizing.

On cicatrices and leucomata. Superficial scars on the eye are called by some cicatrices, and by others nebulæ; but the more deeply seated are called leucomata. The proper remedies for them are those of a detergent and cleansing nature. Wherefore, nebulæ may be cleansed by the juice of anemone, and that of the small centaury, with honey; but the more chronic are reduced by cedar gum, or by copper alone levigated with water for a collyrium, and by the cleansing collyria, such as that from hartshorn, and those called *rhinarian, hecatombe,* and the like. Leucomata may be cleared away by nitre carefully levigated with some old oil, and properly smeared upon them, and by the shell of the cuttle-fish (*sepia*) burnt and pounded finely with honey. Among the collyria, the following one proves an excellent and mild detergent: Of mamira, of ammoniac perfume, of Troglodytic myrrh, of crocodile's dung, equal parts; make a collyrium, and use. Levigate the dung of the land crocodile with water, and anoint, having formed it into a collyrium. You may also succeed well by dissolving Cappadocian salts in water, and then dissolving the collyria for leucoma in it, and injecting it.

Dyes for cicatrices. Of galls and acacia, of each dr. iv; of copperas, dr. ij; use. The following is a collyrium: Of the flowers of the pomegranate, of copperas, of acacia, of gum, of each dr. iv; of antimony and galls, of each dr. ij; triturate with water. When the flowers of the pomegranate are not at hand, you may use the internal membrane between the seeds.

On pterygium. Pterygium is a nervous (membranous?) excrescence of the tunica adnata, arising at the angle of the eye, and advancing to the corona. When it increases greatly, it covers the pupil itself. Wherefore, large and chronic pterygia can only be extirpated by a surgical operation. But the smaller and more recent ones may be worn down by the abstergent applications, such as those used for trachoma and leucoma. Among the simple remedies are burnt copper, and copperas with the gall of swine, which answer well. The following is a more potent remedy: Of copperas, p. i, of gum, p. ss.; triturate with

wine, and anoint, or form into collyria. Some mix the gall of a goat with honey, and anoint with it.

For pterygium, hypopyon, and dimness of vision. (From Oribasius.) Of the magnet-stone, of scraped verdigris (xyston), of reddle, of ammoniac perfume, of each dr. iv; of saffron, dr. ij; of Attic honey half a spoonful. It also answers for leucoma.

For carbuncle and carcinoma. Carcinoma is an affection of the cornea, attended with pain, distension, redness of the tunics, and pungent agony, extending to the temples, more particularly if shaken. They loathe their food, and have the pain increased by acrid things. The affection is incurable, but may be alleviated by a milk diet, farinaceous and otherwise wholesome food, devoid of all acrimony; and the injection of soothing collyria, such as the Spodiac, Severianum, and the like. We must previously attend that the general system be in a proper temperament. Carbuncle also is a malignant ulcer of the sloughy kind, forming sometimes in the ball of the eye, sometimes in the eyelid, as in the other parts of the body. In cases of carbuncle of the ball of the eye, we must first evacuate with a clyster, and then purge moderately with boiled milk, afterwards foment with a sponge, and apply a cataplasm of the flour of tares, or of wheat boiled in honied water, or sometimes we may add pounded iris, and wash the eye with milk. If the ulcer spread, we may apply a cataplasm of lentils with honey or boiled quinces: if it continue spreading, we may use the boiled leaves of the olive, the rind of the pomegranate boiled in wine and pounded with honey. When the ulceration stops, and the eschar falls off by the application of the medicine about to be described, and the ulcers have become clean, we may apply a cataplasm of the roasted yelks of eggs, triturated with saffron and honey, until the ulcer is healed. The medicine is this: Of spodium, dr. iv; of myrrh not much toasted, dr. iij, and oboli iij; triturate in Aminæan wine until it become dry, mix old Cretan sweet wine, and having triturated, lay up the liquid in an earthen vessel, and anoint with it. For carbuncles of the eyelids, having cut an acid pomegranate, boil it whole in vinegar, and, when softened, pound and put it into a linen cloth, and use. Change twice or thrice during the day, and once during the night.

On mydriasis. When the pupil does not appear changed in colour, but much wider than natural, and when it sometimes

wholly impairs the vision, and sometimes nearly so, and when every object appears smaller, the affection is called mydriasis. The cause of it is some redundant humour. We must cure it by bleeding from the arm, or purging; but, if not, by dividing the veins in the angles of the eye, and then applying a cupping instrument to the back part of the head, and bathing the face and eyes with sea-water, or, if it be not at hand, with brine or oxycrate. We must also use the remedies which are applicable to phlyctænæ or blisters.

On phthisis and atrophy. Phthisis is an affection of the pupil, which is contracted, and appears duller and more rugose than usual, but objects seem larger than natural. The cause of it is condensation, mostly occasioned by dryness. Phthisis differs from atrophy in this, that phthisis renders the pupil contracted, whereas in atrophy the whole eye is smaller and more depressed. We may cure them by exercise, and rubbing carefully the head, the face, and the eyes; by bathing the face with water, and anointing the head with some healing ointment; and smearing the eyes with an attenuant and acrid composition, such as the following: Of ammoniac, dr. j; of crocomagma, dr. iv; of saffron, dr. ij; of verdigris, dr. j. Triturate in water, form and use.

For nyctalopia. In the disease called nyctalopia, the patient sees during the day, but at sunset his vision becomes dimmer, and when night comes on he does not see at all. We must effect the cure by bleeding from the arm and the angle of the eye, then purging or evacuating by a clyster, and afterwards ordering masticatories or sternutatories. Before food, we give hyssop to drink, or rue; but, if the disease do not yield, we must again administer the purgative medicine formed from scammony, and castor, anoint with clarified honey, and make the patient shut his eyelids, so as to retain the liquid application Or of burnt alum, p. ij; of fossile salt, p. j; triturate with honey and anoint.—*Another:* Having roasted the liver of a goat, collect the ichor during the roasting and anoint, but give the liver itself to eat; or boil, and direct the vapours to be received with open eyes.

For glaucoma and suffusion. (From Ruffus.) The ancients considered glaucoma and suffusion as the same disease; but by their successors glaucoma has been accounted an affection of

the crystalline humour, which is changed by a watery substance to a cerulean colour; but suffusion is reckoned a defluxion of humours concreted between the cornea and the crystalline lens. Glaucoma is in every case incurable. Suffusion may indeed be cured, but not always. We may try to cure suffusion before the disease is completely formed, by taking blood from the arm, by purging and acrid clysters, such as those made from the decoction of centuary, or of the bitter cucumber, and by keeping the bowels for some time in a loose state. Cupping instruments with scarifications may be applied to the hind-head; the patient must drink water during the whole regimen, take attenuant food, and, in process of time, masticatories may be used for a few days with advantage. When the vision is depraved, as, for example, gnats appearing before the eyes, which case proceeds from a cacochymy or from bilious vapours ascending to the head, we may give for a time the bitter medicine from aloes, or purge with it. To the eyes we must make applications at first simple, such as honey and oil, with the juice of fennel, and afterwards compound, such as this: Of sagapene, dr. ij; of Cyrenaic juice, of white hellebore, of each, dr. vj; triturate with eight heminæ of honey. We, says Oribasius, use the following medicine: Of the juice of wild carrots, of germander, of cresses, of each, equal parts; triturate. The following collyria are beneficial, namely, that from the juice of the fennel, that called *proteus*, the *thalasseros* and that from opobalsam. The collyria prepared from them are useful, and the decoction of fennel in the commencement answers well as a fomentation, and that from juices, opobalsam, honey, old oil, and the like.

On amaurosis and dimness of sight. Amaurosis is, for the most part, a complete impediment of the sight without any apparent affection about the eye; and dimness of sight is an imperfection of vision arising without any sensible cause. The same mode of cure as that described for suffusion applies generally in this case; but, in particular, blood may be abstracted from the corners of the eye, leeches applied to the temples, and friction of the extremities. In process of time we must have recourse to sternutatories, emetics with an empty stomach, and the application of ointments, at first with equal parts of honey and oil, and afterwards with the under-mentioned composition: Of saffron, two oboli; of the gall of the hyæna, dr. j; of common

pepper, eighty-five grains; of fennel juice, dr. xvj; of ammoniac perfume, dr. j. Triturate the dry substances with the juice, add four spoonfuls of honey, prepare and lay up in a copper vessel for use. Before using, let him foment the eyes by immersing them in hot sea-water.

On strabismus, or squinting. Congenital squinting is cured by the application of a mask, so that the children are compelled to look straight forwards; for strabismus is a spasmodic affection of the muscles which move the ball of the eye. And the lamp should be placed fairly opposite, and not so as to shine obliquely. When the eye is turned to the nose, purple flocks of wool should be fastened to the outer angle of the eye, so that by looking steadily at them, the persons affected may correct the state of the eyes.

On ecpiesmus. The eyes are sometimes forced out, so as to remain prominent. When this happens from strangulation, we must let blood from the arm; but if otherwise, we must purge with black hellebore or scammony. When the eyes become prominent from the pain of labour, the complaint is often removed by the cleansing after parturition; hence we ought to promote it; and, in men, after phlebotomy, if it do not abate, we may affix a cupping instrument to the back part of the head, and apply wool smeared with honey, or flocks of it with water, and bind a compress gently above it. Cold salt water poured upon the face is likewise suitable to them, and also the juice of endive and knot-grass, rubbed in with the juice of poppy, and whatever else can repress and contract.

On synchysis, or confusion. Confusion of the sight occasioned by a blow may be cured by bleeding from the arm, and by filling the whole eye with the blood of a newly-slaughtered animal, of a turtle in particular, but, if not, of a pigeon, and then applying soft wool which has been immersed in an egg beaten up with wine and rose-oil, and binding it on the place. The same thing is to be done next day; and on the third, it is to be fomented, washed with milk, and suitable cataplasms applied; after which it is to be anointed with the remedies for old affections, such as Chiac.

For myopia. Those persons are called myopes, or near-sighted, who, from their births, see near objects, but not those at a distance. Such a state is wholly incurable, being occasioned

by a weakness of the optic spirit. Old men are affected in the opposite manner to these, for they do not perceive near objects, but see those at a distance.

COMMENTARY. See Hippocrates (Aphoris., de Visu, et alibi); Galen (de Loc. Aff. iv, de Med. Sec. Loc. iv); Aëtius (vii); Alexander (ii); Oribasius (Synops. viii); Actuarius (Meth. Med. iv, 11); Leo (iii); Psellus (Opus Medicum); Palladius (Comment. in Hippocrat. Epidem.); Scribonius Largus; Octavius Horatianus (i, 10); Nonnus (Epit. 45); Serapion (ii); Avicenna (iii, 3, 1, 2); Mesue (de Ægrit. Ocul.); Avenzoar (i, 7); Haly Abbas (Theor. ix, 13, Pract. v, 34); Alsaharavius (Pract. iv); Rhases (Divis., ad Mansor. ix, and Contin. ii); Canamusali (de Oculis, vi); Jesu Haly (Tract. de Oculis.) COMM.

On pain, disorder of the eye, ophthalmy, inflammation, and defluxion. The ancients treat of these complaints separately; but, as they are so nearly connected, we shall class them together. By disorder of the eye (*taraxis*), they meant an inferior degree of ophthalmy, as is remarked by Turnebus. (Bernard's Nonnus, 45.) It is, therefore, the mild acute ophthalmy of Scarpa. The remedies enumerated by Hippocrates for pains of the eyes are thus given in the language of Celsus: "Sanguinis detractio, medicamentum, balneum, vinum." Drinking wine might appear to us at first sight not a very likely mode of curing ophthalmies; and yet Galen, in his Commentary on this Aphorism (vi, 31), has related a case in which it effected a cure after every other remedy had failed. Even Scarpa allows the correctness of the aphorism as a rule of practice, and states that wine and the cold bath are proper when the disease is kept up by excessive irritability. Alexander recommends wine and the tepid bath when the inflammation arises from thick and pituitous blood. Philagrius, as quoted by Theophilus in his 'Scholia on Hippocrates,' indicates that the wine should be white, sweet, new, and if the patient's head be delicate, diluted with water. (See further, t. ii, 501, ed. Dietz.) Mesue makes many interesting remarks upon the above-mentioned remedies of Hippocrates. For further explanation of the rationale of this practice, see Schelhammer (de Tumoribus), and Littré (Hippocrat. t. iv, 418.) Another of Hippocrates' aphorisms is, that a spontaneous diarrhœa is a favorable occurrence in ophthalmy; upon

Comm. which Galen remarks, that, in imitation of nature's method of removing the complaint, physicians are in the practice of producing an artificial looseness by means of cathartics and clysters. Lead is an ingredient in several of Alexander's collyria. For periodical ophthalmy, Hippocrates recommends purging the head and bowels; and in certain cases bleeding, cupping, and restricted diet. Celsus, Galen, and, in short, most of the ancient authorities make mention of narcotics, such as opium and mandragora, but do not approve of them as common remedies. Galen, however, instances ophthalmy as one of the species of inflammation in which opium is admissible. (De Optima Secta, 9.) Alexander, in like manner, cautions against the indiscriminate use of opium to lull the pain. Some of his prescriptions for collyria, however, contain opium. Galen recommends scarifications in chronic defluxions of the eye. Aëtius lays down very proper rules respecting purging, fomentations, venesection, and baths. He properly remarks regarding the use of wine, that it is only applicable when the patient is of a dry and cold intemperament. Celsus is a decided advocate for fomentations with hot water in all cases of ophthalmy.

The Arabians treat ophthalmy upon the same principles as the Greeks, without supplying much additional information. Mesue, like our author, recommends bleeding by opening the temporal artery, which operation he describes minutely. When the bleeding cannot be stopped otherwise, he directs us to secure the vessel with a silk thread. He also makes mention of leeching and the actual cautery. He is very minute in his directions about his collyria. One of his anodyne collyria consists of the juice of hyoscyamus, mandragora, and opium; and another contains camphor, saffron, hyoscyamus, and the like. The use of narcotics, however, is forbid by Jesu Haly. Rhases also rather disapproves of them. Avicenna makes mention of bleeding by the temporal arteries, the angular vein of the nose, and the frontal. When the usual remedies do not succeed, he approves of the cautery; and, in certain cases, recommends strongly the use of stimulant applications, such as æs ustum, copperas, and arsenic. Galen, in like manner, makes mention of arsenic, and also of misy, sori, and chalcitis (substances resembling our sulphate of copper) among his remedies for diseases of the eye. Having ourselves had occasion to use arsenic in certain malig-

nant diseases of the eyelids, and not having found that it pro- COMM.
duced any serious disorder in the ball of the eye, we would call the attention of modern oculists to this medicine as one from which, when properly managed, the best results may be expected. When the ophthalmy is of a cold nature, Avicenna approves of treating it by an attenuant diet, the bath, and white wine. In certain cases he directs us to pour cold water on the head. Haly Abbas describes three varieties of ophthalmy. The first arises from manifest causes, such as the sun, dust, and the like; and is to be cured by bleeding, purging, and cooling lotions, containing rose-oil, camphor, &c. In the second, the symptoms are more severe, being attended with greater redness and pain. It also is to be cured by bleeding, cupping, and emollient collyria. The third variety is chemosis. Alsaharavius treats of the disease at great length. When it is connected with a bilious cause, he directs us to purge, use the bath, apply vapours to the eye, and soothing collyria. Serapion, like Haly, describes three varieties of the disease by the names of *tarkinisis, noutelinie,* and *kermufil.* Jesu Haly recommends general bleeding, purging, and fomentations, with the decoctions of fenugreek and fennel, for ophthalmy. It remains to be mentioned that Galen, Alexander Aphrodisiensis, and all the Arabian authorities have placed ophthalmy in the list of contagious diseases. See, in particular, Alex. Aph. (Prob. i, 35), and our brief sketch of the history of ancient opinions on contagion in the Second Book, Sect. XXXVI. The celebrated Fracastorius confidently maintains that ophthalmy is contagious. (De Morb. Contag.) And we may further mention that all the authorities of the middle ages speak of ophthalmy as being contagious.

On chemosis. By chemosis, modern oculists (as, for example, Scarpa) understand that state of ophthalmy when blood, owing to a rupture of one or more vessels, is effused into the cellular membrane which connects the conjunctiva to the anterior hemisphere of the eye. Our author's account is mostly taken from Oribasius, who, in his turn, borrows from Demosthenes. Galen and Octavius Horatianus, without saying anything of the general treatment, merely recommend us to apply upon a clean linen cloth flies pounded with the yelk of an egg. Chemosis is Haly's third variety of ophthalmy, for which he recommends copious and repeated bleeding, cupping, gentle laxatives, cata-

COMM. plasms containing poppies when the pain is violent, and other soothing collyria. Alsaharavius, in like manner, recommends depletion and emollient fomentations. Serapion, among other things, mentions soothing fomentations. In chemosis, according to Rhases, all the symptoms of ophthalmy are particularly strong and violent; the eyelids being swelled and everted, and the white of the eye appearing black. He recommends local and general bleeding, purging, and astringent applications.

On hyposphagma and emphysema. Hyposphagma is not described by any particular name in modern surgical works. Besides the local applications mentioned by our author, Aëtius properly recommends general treatment, we mean bleeding, purging, and the like. Avicenna also makes mention of venesection and arteriotomy. Haly describes the disease by the name of *tumor oculi* as his first variety of *inflatio*. Alsaharavius uses the same term. Serapion treats of it by the name of *sanguis divisus in oculo*, recommending treatment similar to our author's. See also Celsus (vi, 6.)

The emphysema appears to have been a sort of œdema seated below the eyelid. Aëtius remarks that it occurs principally in old men. We have often seen it in them. He recommends fomentations by means of a sponge, rubbing the eyelid within with honey, pouring hot water on the head, using baths, drinking wine, and even bleeding at the arm. This last measure is omitted by our author, and must be unnecessary in general. It is described by Haly Abbas as his second variety of *inflatio oculi*. He says it is an œdematous swelling principally affecting old men in summer. He recommends collyria of a sharp penetrating nature, and various other applications.

On psorophthalmia, sclerophthalmia, and xerophthalmia. For these affections Aëtius gives various prescriptions containing calamine, burnt copper, chalcitis, and the like. Similar ones may be found in Galen (sec. loc.) Galen, like our author, recommends fomentations, by means of a sponge, with hot water or the decoction of poppies. One of Alexander's prescriptions for psorophthalmia contains arsenic. Celsus describes the symptoms and treatment of xerophthalmia very minutely: "Neque tument, neque fluunt oculi, sed rubent tantum, et cum dolore quodam graves sunt, et noctu præ gravi pituita inhærescunt." He gives the sum of his treatment in this short sentence: "In

hoc vitio multum ambulare, multum exerceri, lavari sæpe, ibique desudare, multâque frictione uti necessarium est." He also prescribes gargles, food of a middle quality, and various compound collyria, such as the rhinion which contained burnt copper, myrrh, Phrygian stone, &c. This affection, the dry ophthalmy, had been described by Hippocrates (Aph. iii, 12, 14.) Most probably, as Sichel suggests, it was the same as the catarrhal ophthalmy. See Littré (Hippocrat. t. iv, 418.) Celsus recommends this collyrium also for the psorophthalmia, which he describes by the name of *scabri oculi*. For this last-mentioned affection he recommends various stimulant applications; and, when other remedies are not at hand, directs us to apply bread pounded in wine. The psorophthalmia is the *prurigo oculi* of Haly Abbas, for which, among other things, he recommends a composition containing pepper, sal ammoniac, saffron, spikenard, camphor, &c. He describes sclerophthalmia by the name of *durities oculi*, and recommends for it bleeding, gentle purgatives, emollient collyria, &c. COMM.

On ectropion. Aëtius, in like manner, recommends compositions containing ærugo æris, misy, and chalcitis. None of the subsequent authorities supply any additional information. Alsaharavius in particular gives a very accurate account of the disease, which, when it arises from a fungous excrescence growing from the inner side of the eyelid, he directs us to burn with caustics; but, when it arises from a cicatrix, it is to be cured only by a surgical operation. This will be found described in the Sixth Book. In place of the caustics recommended by the ancients, Scarpa directs the argentum nitratum to be applied.

On ægilops and anchilops. These are different stages of the disease now known by the name of fistula lachrymalis. Galen states that at the commencement it is to be cured by applications which are repellent without being too stimulant. He gives a full account of the treatment recommended by Archigenes. The first application mentioned by him is a cataplasm consisting of tares and honey. Scarpa, by the way, speaks favorably of the practice of Ægineta, Aëtius, and Avicenna. Avicenna treats of the disease with great judgment. His first applications appear to have been intended to produce resolution; and, if these fail, suppuratives are to be applied. When the abscess bursts, the sore is to be reduced to a healthy state by

COMM. escharotic powders containing alum, limatura æris, sal ammoniac, and the like. When these fail, a surgical operation must be had recourse to. This is described in the Sixth Book. Mesue also has treated of the disease at great length. Haly Abbas describes the disease very correctly. He says, "Aliquando autem ejus sanies ad nares defluit per foramen quod inter oculum est et nasum." This passage puts it beyond a doubt that the ancients were acquainted with the lachrymal duct. The disease, he says, sometimes occasions caries of the cartilages (*os unguis?*). When it is recent, he recommends bleeding and laxatives; and when it gets into a fistulous state, he directs us to use applications containing arsenic, sal ammoniac, cantharides, alum, &c. Alsaharavius mentions that the abscess of the lachrymal sack may either burst outwards or into the nose. It would appear, therefore, that he also was acquainted with the natural structure of these parts. One of the applications recommended by Rhases for fistula lachrymalis contains arsenic, quicklime, and vitriol. Another is prepared from litharge, arsenic, and oil. These applications are mentioned by the earlier of the modern authorities on medicine. See Theodoricus (iii, 2.)

The protostactos mentioned by our author was a composition consisting of potass and lime. (See Book Seventh, *in voce*, κονία.)

On trachoma. This affection does not appear to be noticed in our late treatises on diseases of the eye, and yet in our own practice we have met with some cases of it. Rowley mentions it as an asperity of the internal superficies of the eyelid. Celsus describes it by the name of *aspritudo*. In severe cases, he says, some scarify the inside of the eyelid with a fig leaf, a rough probe, or a scalpel. But in ordinary cases, he rather approves of using exercises, frequent baths, fomentations with hot water, attenuant food, and escharotics, such as copperas, misy, antimony, and the like. Galen and Aëtius give prescriptions for various collyria. They consist principally of detergent and caustic substances, such as sal ammoniac, squama æris, calamine, and the like. It seems to be the disease which Haly Abbas treats of by the name of lapidositas. (Pr. v, 51.)

On chalazion. We will treat more fully of the nature of this tumour in our notes on Section XVI of the Sixth Book. It appears to be the species of encysted tumour said by Scarpa to

be well described by M. Aurelius Severinus. (On Diseases of the Eye, 3.) Rowley describes it as a movable tumour in the margin of the eyelids. Aëtius recommends us to open the tumour with a scalpel, and apply to it escharotics, such as burnt copper, chalcitis, and red arsenic. By Haly Abbas it is called *grando*, and the remedy mentioned by our author is recommended by him. Alsaharavius describes it as a gross humour congealed in one of the eyelids. He describes by the name of *alsaanac* a fatty tumour of the eyelids which we have sometimes met with and extracted. On the chalazion, see Celsus (vii, 7), and Isidorus (Orig. iv, 8.) COMM.

On hordeolum. Most of the ancient authors treat of this trifling complaint in much the same terms as our author. Scarpa evidently is mistaken in making the hordeolum and chalazion to be the same complaint. Haly Abbas describes it as being an oblong abscess resembling a grain of barley on the extremity of the eyelid. He recommends general depletion, and nearly the same remedies as our author; also a cataplasm of galbanum. Alsaharavius treats of it in a similar manner. Rhases particularly recommends melted wax as an application to it. He also speaks favorably of the diachylon plaster.

On lice in the eyebrows. Stavesacre is a very ancient remedy for pediculi on all parts of the body. Celsus lays down very minute directions for the constitutional treatment, and recommends a local application containing sandarach, or the red sulphuret of arsenic. Avicenna makes mention of sulphurous baths. Haly Abbas recommends general purging, various stimulant applications, and abstinence from figs. Our author states, in Section LXXXI of the First Book, that figs engender lice. Alsaharavius directs the eyebrows to be rubbed with sal ammoniac, alum, salts, &c. Jesu Haly recommends purging with hiera, the frequent use of the bath, and applications containing stavesacre, sulphur, alum, nitre, sal ammoniac, vinegar of squills, and the like. Rhases recommends a powder containing quicksilver.

On madarosis, or milphosis, and ptilosis. Aëtius, Actuarius, and Nonnus treat of these diseases in similar terms. The calliblephora are fully described by Galen (sec. loc. iv.) Haly Abbas seems to allude to these complaints in the following sentence: "Palpebrarum autem casus ex humiditate fit acutâ aut alopetia, et quidam fit cum palpebrarum grossitie et duritie,

COMM. ruboreque, et dolore." His remedies are like our author's. The same may be said of Alsaharavius.

On trichiasis. Our author's treatment is mostly imitated from Galen. We shall treat more fully of the disease in the Sixth Book. Scarpa places no confidence in the operation of plucking out the hair, and yet it is favorably spoken of by most of the Greek and Arabian authorities, as, for example, Aëtius, Avicenna, Alsaharavius, and Haly Abbas; and also by Rowley, and other modern oculists. Haly, like our author, directs us to touch the part from which the hair has been plucked with the blood of a frog, or of a dog's tick, or with the milk of a fig, or the gall of a hedgehog. Alsaharavius makes mention of the same remedies, and also of the mode of treating it by agglutinants. According to Actuarius, the disease consists in certain of the ciliary hairs being turned inwards and hurting the eyeball. (ii, 7.)

On encanthis and rhyas. Scarpa removes the encanthis by a surgical operation; but, from our own experience of the effect of septic medicines, such as arsenic, in similar complaints, we cannot doubt the propriety of the ancient practice in certain cases. Galen's applications contain copperas, misy, sal ammoniac, and the like. Those of Aëtius are nearly the same. He remarks that seamen are particularly liable to the complaint. Haly Abbas recommends general evacuation and escharotic applications.

On ulcers. In the description of the ulcers of the eye our author follows Aëtius. He, however, evidently was much indebted to Galen (sec. loc. iv.) The Arabians copy from Galen, describing like him seven varieties of ulcer, which they treat upon general principles. See, in particular, Haly Abbas (Pract. v, 41.) Opium is one of his medicinal articles. Ceruse, starch, gum arabic, albumen, &c. also occur. See also Jesu Haly (ii, 50,) and Rhases (Cont. ii.) Celsus recommends various compound applications for ulcers of the eye, which he treats of very minutely.

The collyria mentioned in this section will be found described in the Seventh Book of this work.

On procidentia. Galen correctly describes procidentia as arising from ulceration of the cornea and protrusion of the iris. (De Diff. Morb. 13.) Aëtius has treated of it with his usual

accuracy. He recommends various escharotic applications containing chalcitis, misy, and the like, which, when properly managed, may probably have answered the purpose equally well with the antimonium muriatum and argentum nitratum used by Scarpa and other modern oculists. Avicenna treats of the complaint like the Greeks. Some of his compositions contain antimony with ceruse, burnt lead, and the like. Haly Abbas describes the disease minutely in nearly the same terms, and recommends nearly the same remedies as our author, namely, such as are of a repressing nature. He properly remarks that it is one of the consequences of ulceration of the cornea. Alsaharavius gives a similar account, and recommends general depletion. COMM.

On hypopyon. Aëtius gives much more judicious directions for the treatment of this complaint than our author. He properly recommends general bloodletting at the commencement, and afterwards local, by means of leeches and cupping instruments; and then emollient, paregoric, and discutient applications to the eye. Galen (Meth. Med.) makes mention of an oculist in his time who effected wonderful cures in this complaint by shaking the patient's head. When this does not succeed, Galen directs us to perforate the coats of the eye, and let out the matter. (See Book Sixth.) Scarpa does not approve of this practice, unless the collection of matter be considerable. However, Plempius and most of the earlier modern authorities in surgery decidedly recommend it. Haly Abbas recommends a discutient cataplasm containing opopanax, ammoniac, and fenugreek. Alsaharavius properly directs bleeding and masticatories at the commencement.

On leucoma. Aëtius directs his attention principally to the general treatment, and properly cautions against the use of strongly stimulant applications, as they only increase the evil. He allows afterwards moderately detergent ones, containing verdigris, burnt copper, squama æris, flos æris, sal ammoniac, and the like. His compositions are taken for the most part from Galen's works (de Med. sec. loc. iv.) Aëtius disapproves of applications for changing the colour of the leucoma. Alexander recommends the detergent applications mentioned by our author. Nonnus copies from him. Haly Abbas describes it by the name of *albedo oculi*, and recommends nearly the same remedies as

COMM. our author. He particularly praises green glass finely pulverized, which is still a popular remedy in Scotland. Alsaharavius makes mention of the juice of the lesser centaury as an useful application. Scarpa speaks favorably of this remedy, and further recommends the Sapphirian collyrium, the ingredients of which are similar to those which entered into the ancient applications. It consists of a solution of scr. ij of sal ammoniac and gr. iv of ærugo in oz. viij of aqua calcis, allowed to stand for twenty-four hours, and then filtered. Rhases recommends an ointment containing arsenic.

On pterygium. Aëtius correctly remarks that pterygium generally begins from the inner canthus, rarely from the outer, and scarce ever from above or below. He gives prescriptions for a variety of applications, which, like our author's, contain burnt copperas, magnesian stone, sal ammoniac, and the like. Galen briefly commends the same. Nonnus, Serapion, and the others approve of this practice. Modern oculists, however, trust to nothing but the operation, which will be described in the Sixth Book. Haly Abbas describes the disease very accurately by the name of *ungula;* and recommends general bleeding, purging, restricted diet, and a variety of collyria. Alsaharavius gives the same account of the ungula, and when it becomes callous (nervosus), recommends an operation. Jesu Haly recommends, before attempting a surgical operation, to make trial of escharotic applications. Rhases also approves of this plan of treatment. The most active ingredients in his prescriptions are sal ammoniac, copperas, and arsenic. Some of his compositions are merely detergent.

On carbuncle and cancer. We are not aware that the parts about the eye are particularly liable to anthrax, nor do we recollect to have ever met with such a case; and yet, as Alexander and our author remark, the disease may occur there as well as in other parts of the body. Rowley describes carbuncle both of the eye and eyelids. Aëtius has given a very circumstantial account of the symptoms and treatment of anthrax. He forbids the early application of cataplasms, and seems to depend most upon constitutional treatment, by clysters, purging, and bleeding. Afterwards cooling and styptic fomentations are to be applied by means of a sponge, along with other treatment similar to our author's. Alexander's plan of treatment is nearly the

same, and is laid down with excellent judgment. That of Oribasius is similar. COMM.

To relieve the pains of cancer, Aëtius recommends soothing applications and an anti-stimulant diet, consisting principally of milk. Avicenna, Alsaharavius, and most of the ancient authorities join in praising milk as the principal article of food in cancer of the eye. Avicenna's applications contain ceruse, opium, and the like. Haly Abbas recommends general bleeding, if the patient's strength permit, with emollient lotions, and collyria: the diet to consist of birds, kids, and lambs. According to Rhases, cancer of the eye is attended with excruciating pains, redness, and distension of the veins, loss of appetite, and inability to bear all applications.

On mydriasis. Aëtius treats mydriasis, or preternatural dilatation of the pupil, like our author, by general and local bleeding, clysters, an attenuant diet, and friction of the extremities. They no doubt considered that the disease arises from congestion in the brain. Avicenna refers the disease to cephalæa and injuries of the head. Scarpa quotes with approbation the account given by Celsus of mydriasis, by which he thinks was meant not only cases of dilated pupil but also of incipient amaurosis occurring suddenly. Celsus approves of opening the bowels freely. Haly Abbas describes the disease, but thinks it almost incurable. It sometimes occurs, he says, from a blow, and sometimes from abscess within the uva. Alsaharavius attributes the disease to congestion, and directs bleeding, purging, and cooling applications. He calls it *dilatatio*. According to Jesu Haly, it is produced by dryness of the uva, or abscess within that tunic, or pressure on the brain. The first species is to be relieved by diluents and relaxants, such as the warm bath. For the second he recommends suitable cataplasms and purgative pills. The third is to be treated by general and local bleeding, cupping, and fomentations with water, vinegar, and salt. *Constriction of the pupil* he directs us to treat upon the same principles as our author. His account of it is mostly taken from Aëtius. Leo describes, under the name of *symptosis*, constriction of the pupil; under that of *paremptosis*, an affection of the optic nerves; under that of *platycoria*, a preternatural dilatation of the pupil, for which he recommends astringents; and under that of *myocephalos*, procidentia of

COMM. the lens, for which he recommends astringents, and even copperas.

On nyctalopia. Aëtius recommends, according to the circumstances of the case, general and local bleeding, drastic purgatives, errhines, and the like. He, Celsus, Alexander, Rhases, Avicenna, Mesue, Jesu Haly, Haly Abbas, and Alsaharavius, like our author, speak favorably of the application from the roasted liver of a goat. Instead of it Hippocrates recommends the liver of an ox. His treatment otherwise consists of bleeding, purging with elaterium, and, in desperate cases, of trepanning the head at the bregma and evacuating the water. (De Visu.) The general treatment of the Arabians is like that of the Greeks. Thus Alsaharavius recommends bleeding, purging with hiera, gargles, sternutatories, and the like. This is also the practice of Jesu Haly.

The term nyctalopia is not used by all the ancient authorities in the same sense. Thus Hippocrates applies it to that morbid state of vision in which the patient is blind during the day but sees better in the evening. Aëtius, Alexander, Paulus, and Actuarius, on the contrary, apply it to that state in which the patient sees clearly during the day but becomes blind in the evening.

On glaucoma and suffusion. Aëtius and Oribasius give nearly the same account of these complaints as Paulus, and yet that of Aëtius seems slightly different. He says that there are two kinds of glaucoma: that the first, to which the name is properly applied, arises from a dryness and concretion of the crystalline humour, which is changed to a sea-green (glaucum) colour; but that the other arises from a suffusion, the humour near the pupil having become congealed and dry. According to Leo, the affection of glaucoma arises when the crystalline humour is congealed, as it were, and having become white, obstructs vision: this occurs in old age and is incurable. Haly Abbas was aware that the disease is sometimes seated in the crystalline lens, but did not know that it always is so. Hippocrates recommends masticatories and the actual cautery. Haly Abbas and Alsaharavius approve of making trial of remedies similar to those mentioned by our author, before attempting the operation. Rhases forbids bleeding when the disease arises from the state of the eye itself. Canamusali, who flourished about the year 1258, recommends

a seton in the nape of the neck for the cure of suffusion. (De Oculis, vi.) Rhases considers the case incurable when the pupil has become insensible to the stimulus of light. COMM.

On amaurosis and dimness of vision. Galen and Aëtius give a very circumstantial account of the causes and treatment of amaurosis. They state that the disease either comes on suddenly, in which case they refer its origin to obstruction and paralysis of the optic nerve, or gradually, when they believe it occasioned by a thickening of the coats of the optic nerve, or a change of the spirits, or of the humours of the eye. They enumerate various causes of it, such as injuries of the head, heat or cold, indigestion, or the like. When the disease occurs suddenly, they approve of general or local bleeding, such as cupping the back part of the head, and active purging. In the other case general depletion is not required, but the treatment is otherwise nearly the same, attention being particularly paid to the state of the bowels. They forbid emetics after food, but approve of errhines. They recommend in certain cases sinapisms to the head.

The Arabians treat the disease upon the same principles. Haly Abbas describes amaurosis among the affections of the optic nerves, and recommends for it general bleeding, purging, and the saffron collyrium. Alsaharavius remarks that it often arises from the state of the stomach, which, in that case, will require the principal attention. Avenzoar blames Galen for giving up as desperate cases of amaurosis which occur suddenly. He recommends general and local bleeding, with repellent applications to the head.

On strabismus. See Galen (de Causis Morborum) ; Oribasius (Synops. viii, 49.)

Avicenna properly remarks that squinting is occasioned by debility or spasm of some of the muscles of the eye. He and Rhases recommend the same treatment as our author. Avicenna also makes mention of a mask. Haly Abbas, who appears to have been intimately acquainted with anatomy, of which his work contains a valuable compendium, explains minutely the cause of the disease, which he attributes to an unequal contraction of the muscles of the eye. See also Alsaharavius and Jesu Haly. Jesu, like our author, directs us to fasten a piece of black or red cloth on the angle of the eye at the temples, when

COMM. the eye inclines towards the nose. He correctly explains that the complaint arises from spasms or paralysis of some of the muscles of the eye.

On ecpiesmus, or protrusion of the eyes. This section is taken from Oribasius. (Syn. viii, 50.)

Aëtius, Avicenna, and Rhases recommend the same treatment for this complaint, which can only arise from suffocation, violent straining, or swelling of the eye.

On synchysis, or confusion of sight. Aëtius and Oribasius treat of this affection in nearly the same words.

Rowley defines *synchysis* to be "a solution of the vitreous humour into a fine attenuated aqueous fluid." It does not appear to us that the ancients understood it in this sense, or that they meant anything more by it than a confusion or disorder of the eye occasioned by a blow.

On myopia. This section also is taken from Oribasius or Aëtius.

Alsaharavius treats of it by the name of *alhayn.* He says it sometimes arises from external causes, such as exposure to snow and cold, in which case he directs us to apply stimulant fumes to the eye and refrigerants to the head. Although the ancients were aware of the magnifying powers of *specula* (as appears from Seneca, 'Quæst. Natur.'), it is doubtful if they ever thought of applying this knowledge to any useful purpose; and hence none of the Greek, Latin, or Arabian medical authors make any mention of spectacles or magnifying glasses as a remedy for this complaint, or for weakness of sight. Dutens, however, maintains that they were not unacquainted with telescopes. (p. ii, 10.) From a passage in Iamblichus it has been supposed that they also used microscopes. (Vit. Pyth. 26.)

One of the causes of myopia mentioned by Jesu Haly is enlargement of the crystalline lens, which he recommends us to endeavour to lessen by means of dissolvents. (De Oculis, iii, 6.)

SECT. XXIII.—ON DISEASES OF THE EAR; AND, FIRST, CONCERNING PAIN OF IT.

Earach may be known to be occasioned by cold from the season of the year, the preceding regimen, or from the patient's own account, if it proceed from any external exciting cause. If the pain be deep-seated without heaviness, distension, or heat, such cases are to be cured by calefacient remedies, as hot oil of rue, or of nard, or hot oil of bays, or that of marjoram, that called *foliatum*, or that called *spicatum*, or common oil with euphorbium, or pepper, or castor, or the ointment called *commagenum*, or opobalsam poured into the auditory foramen; and oil in which garlic or onion has been boiled is of service when injected. Pain from a hot intemperament is judged of by a certain sensation of heat without heaviness or tension. You may cure it by the opposite remedies; by injecting the white of an egg triturated, as in affections of the eye; and woman's milk, along with some of the anodyne collyria, or the juice of perdicias (*pellitory of the wall?*), with a small quantity of rose-oil, and rose-oil itself, or rose-oil and vinegar, or the juice of the nightshade, or of coriander, or of kingspear, or oil in which earthworms or millepedes have been boiled; or almond-oil, either by itself, or having three living buccinæ boiled in it, is of great natural efficacy. Pain from viscid and thick humours you may judge of from the heaviness of head, or of the ear itself, and from the previous regimen. When it is without heaviness, this state alone of hearing indicates a windy spirit that cannot get vent. In both these cases we must use remedies of a deobstruent and incisive nature, such as the aphronitrum with vinegar and honey, and sheep's gall with common oil, or the oil of almonds, and the tepid juice of leeks and onions with honey; or triturate common marjoram with honey and a woman's milk, and inject it. For stronger coldness inject goat's gall with the juice of leeks; and when the pain is great and of long duration, and when difficulty of hearing is present, we must use these remedies, namely, the juice of dragon-herb, of wake-robin, and of bryony, and the like. When the pain is occasioned by a windy spirit, it may be greatly remedied by applying a cupping-instrument previously

heated in hot water, and affixed near the ear. But if there be heaviness, distension, and heat, with a pulsatory pain or fever, you may be sure that the ear is inflamed; and you must, in the first place, have recourse to phlebotomy, then foment frequently with hot sweet oil by means of the ear specillum wrapped in wool. We must also inject into the ear the fat of a goose or of a fox, or the ointment basilicon, with the oil of roses, of privet, or of iris, and apply externally cataplasms of a paregoric and digestive nature; but when the pain compels us we may use those things which are moderately narcotic, for there is no little danger, owing to the nearness of the brain to the inflamed auditory nerve. The following is an excellent paregoric: Of opium, p. j; of castor, p. ij. Inject it warm with a woman's milk, or the white of an egg, or tepid sweet wine. And the trochisk of saffron, that called aster, and the antidote of Philo is often of service to them. You must foment frequently, either with common oil or some of the hot fomentations, and apply to the ear wool steeped in it, taking care not to touch the inflamed part. When the pain continues and an abscess is about to form, use the remedy from the juice of linseed, injecting it softened with oil of roses or of chamomile. When the pain is occasioned by poisonous water which has got into the foramen of the ear, and if it be in considerable quantity it will be necessary to suck it out either with the mouth or by a reed; but if in small quantity, it may be wiped away with the ear specillum wrapped in wool; and then some of the attenuant oils may be injected, or else rose-oil, or the white of an egg, or a woman's milk. Everything applied to the ear should be moderately warm.

For ulcers with inflammation. Triturate equal parts of lycium (*catechu?*) and meconium with honey, and inject.

For severe pain, pus, and difficulty of hearing. Of whitened almonds, xx in number; of aphronitrum, dr. iij; of opium, dr. iij; of frankincense, dr. iij; of saffron, dr. iv; of galbanum, dr. ij; of myrrh, dr. j; triturate with vinegar, and inject. When there is pain, dissolve it in oil of roses, and when there is a discharge of pus, in mulse or oxymel, and when there is deafness, in vinegar. Recent ulcers are cured by horned poppy dissolved in vinegar, by the collyria from it, and by those formed from roses, saffron, and myrrh, in like manner as running ulcers

without pain are cured by the recrement of iron triturated with vinegar during the heat of the dog-star.

To remove the hard sordes of the ears. Dissolve nitre in vinegar, and inject with water, and having wiped it dry, inject nitre dissolved in vinegar with rose-oil.—*Another for sordes:* Mixing cardamom and a little nitre with dried figs freed from their stones, make collyria, which put into the ear, and remove after three days. It brings away much sordes, and gives much relief. It also applies to fungous flesh, chronic pains, and ulcers. Or of aloes, of frankincense, of myrrh, of each, dr. j; of misy, dr. iv. Make a trochisk of it with vinegar, and, when you are going to use, dissolve it in vinegar and rose-oil, and inject. In the same manner the trochisks of Andron, Heré, and that of Musa may be used.

For chronic ulcers. Mix gum juniper with honey, and anoint. —*Another:* Blow in misy what has been burnt and levigated. Before using those things which are injected into the ear, syringe it first with oxycrate in oxymel, or in mulse, or in a decoction of some repellent article, such as dried lentil or roses.

For bloody ears. Wash with the decoction of bog-rush, and inject the juice of knot-grass, with a little vinegar, or lycium, or lees of oil, or acacia, or the juice of leeks.

For fungous flesh. Wash nitre in hot water, and use with equal parts of flakes of copper and sandarach. Clean the eschars which are formed by it with honey.

For vermes in the ears. Wash with a decoction of wormwood, of centaury, or of leeks; inject the juice of the green leaves, or of the fruit of capers, or cedar-gum, or old human urine, or white hellebore with honey, or the juice of calamint, or scammony with vinegar, or the juice of wormwood. Oil poured into the opening of the ear, so as to make them ascend to the top, answers well. But a better application is vinegar and oil. It also applies to animalcules which fall into the ear.

For calculi and the like which have fallen into the ear. Having wrapped some wool about an ear specillum, dip it into turpentine-rosin, gum, or some glutinous substance, and thus draw it out; but if it does not yield, pour frequently warm oil into the passage; and if it do not fall out or is left behind, use the other means to be described in the Surgical part of this work.

On noises. If noises occur in fevers at their crisis, they ought

not to be interfered with, for they will commonly cease of themselves; but, if they remain after the disease, having fomented with the decoction of wormwood, inject vinegar and rose-oil, or the juice of radish with rose-oil, or that of black hellebore with vinegar. For chronic noises occasioned by thick and viscid humours (which you may know from their coming on not suddenly, but gradually), syringe with vinegar, nitre, and honey.—*Another:* Of white hellebore, dr. ij; of castor, dr. ij; of saffron, dr. iij; of nitre, dr. xvj. Make trochisks, which triturate in vinegar, and use.

For chronic noises and hissing sounds. Triturate euphorbium with oil of privet, heat and use. When, from increased sensibility, they experience the sensation of vapours or spirits carried upwards, triturate castor and the seed of hemlock with vinegar, and inject.

On difficulty of hearing and deafness. Those cases which are congenital, or which, although not congenital, are inveterate, and attended with complete deafness, are incurable; and those which, although not complete, are inveterate, prove also incurable, or difficult to cure. Those which are formed by a bilious humour ascending upwards, you may easily cure by evacuating with cholagogue medicines; and sometimes the complaint goes off spontaneously, when bile is discharged downwards. Deafness, or difficulty of hearing, occasioned by crude and thick humours, you may cure by opening a vein, by purging freely with hiera, and by using masticatories, errhines, and natural or salt baths. It is also proper to inject into the ear those things which are recommended above for noises. But the following are particularly applicable: Inject the urine of a goat and the gall of a goat together, or the gall singly; or the juice of rue with honey; or castor with the oil of dill; or the medicine œsypum with nard ointment; or the gall of a goat with galbanum; or this: Of castor, dr. ij; of nitre and white hellebore, of each, dr. j.

For contusions of the ears. Hippocrates recommends us to apply nothing to them; but since we are often compelled by those who have sustained the injuries to do something, we may use the following: Of myrrh, of aloes, of frankincense, of acacia, equal parts; anoint with vinegar or the white of an egg. Or, pound in a mortar the inner part of warm bread with honey,

and apply as a cataplasm. Or this: Of bitumen, of frankincense, of aloes, of the flesh of snails, of African bulbi, equal parts, triturate with vinegar, and apply. When there is inflammation, triturate with oily grain (*sesame*), or with chondrus boiled in vinegar, and apply as a cataplasm; but let the cataplasm be light, and not bandaged at all, or but slightly; and let wool dipped in oil be introduced into the passage.

On parotis. Parotis is an affection of the glands about the ears, being sometimes occasioned by humours from the head which are impacted in it, and sometimes by those collected from the rest of the body during the crisis of a fever. If it be deep-seated, and do not occasion a swelling, we may assist nature by applying attractive remedies, either by putting on a cupping-instrument or using frequent fomentations. For if the matter be determined inwardly, there is no ordinary danger; but, if it inflame and swell out to a tumour, we must, on the contrary, use soothing and digestive cataplasms, such as that from barley-flour, that from wheat, or from the flour of linseed with honied water, or boiled with the decoction of fenugreek, or of marsh-mallows, or of chamomile, and that from dock and axunge without salt. But if it appear that there is a fulness of blood, we must first evacuate by phlebotomy, if the strength permit: but if the swelling be not dissipated, we must use suppurative medicines, such as wheat-flour, with the decoction of dried figs and oil, and the application made from pollen and that from leaven. When the aposteme is converted into pus, we may evacuate it either by opening it, or produce its rupture by means of an acrid medicine, such as that called smilium, or that from garlic. The milder kinds of parotis are discussed by a fomentation of salt water, or the composition from Aperanus. This medicine is calculated to discuss the converted pus, and to prove very anodyne. For inveterate cases of parotis, we may apply the ashes of burnt buccinæ, or purpuræ, with honey or axunge, or figs boiled in sea water, or horehound with salts. Hard ones are softened by the composition of Mnasæus, and that of Ariobarzan; but one of the best applications is that formed from the juice of linseed. But before using these, we are to apply cataplasms of ammoniac, mixing with them liquid pitch, bull's fat, bdellium, storax, or hart's marrow.

COMM. COMMENTARY. The following ancient authors treat of diseases of the ear: Hippocrates (de Affectionibus, et alibi); Galen (Sec. Loc. iii); Celsus (vi, 7); Oribasius (de Loc. Aff. iv); Aëtius (vi, 74 et seq.); Alexander (iii); Scribonius Largus; Marcellus (de Med. 9); Nonnus (74 et seq.); Cælius Aurelianus (de Tard. Pass. ii, 3); Actuarius (Meth. Med. iv, 10); Pliny (Hist. Nat. xxviii, 48); Octavius Horatianus (i, 7); Mesue (de Ægr. Aurium); Avenzoar (i, 4); Serapion (2); Avicenna (i, iii, 4); Albucasis (ii); Haly Abbas (Theor. ix, 14; Pract. v, 62); Alsaharavius (Pract. iii); Rhases (ad Mansor. ix; Contin. iii.)

For relieving earach Hippocrates recommends the warm bath and fomentations; and when these do not succeed, phlegmagogues and masticatories are to be used.

Celsus gives very judicious directions for curing pain of the ears, but his treatment is little different from our author's. When the pain is not violent he recommends abstinence alone; but if severe, venesection, purging, hot cataplasms from linseed and fenugreek, or sponges squeezed out of hot water. When the inflammation is particularly violent, poppies are to be added to the injections, which must be tepid; and when the ear is filled with them, soft wool is to be put over it to contain the injection. He mentions various compound applications, which contain poppies, castor, myrrh, alum, saffron, and the like.

Our author copies from Galen. He recommends the following simple application: Having scooped out the heart of an onion, fill it with oil, and having heated it in ashes, put it into the ear. He gives prescriptions for various injections and other compositions, which are similar to those of our author and Celsus.

Aëtius on this head is more brief and less distinct than our author.

Alexander, Actuarius, and Octavius Horatianus treat of these complaints very properly, but not differently from Celsus and our author. Alexander states correctly that inflammation within the ear sometimes spreads to the brain, and proves fatal. He enjoins caution in using opiate applications to the ear, as he has seen dangerous effects from them by their inducing stupor. He particularly approves of introducing steam into the ear, by means of a tube connected with a vessel containing some boiling decoction.

Marcellus gives a long list of empirical applications, from which, perhaps, something valuable might be extracted. He recommends, like some of the other authorities, a solution of alum in hot vinegar, with some honey. We shall see in the twenty-sixth Section that alum was much used for allaying the pains of toothach. Among the ingredients in his injections we remark tepid milk, opium, castor, spikenard, saffron, opobalsam, millepedes, &c. COMM.

The treatment directed by the Methodist Cælius Aurelianus is little different from that of the other sects. He approves of putting tepid oil into the ear; of stuffing it with wool; of using fomentations, cataplasms, leeches, and scarifications; and when the disease becomes chronic, of shaving the head, and applying acopa, dropaces, malagmata, and so forth.

Serapion and Rhases treat the complaint exactly like our author.

Avenzoar relates a case of inflammation seated in the meatus, which he cured by filling it with oil of eggs. He further recommends bleeding and the other remedies already mentioned. Avicenna treats of diseases of the ear most minutely and scientifically, but at too great length for us to do justice to his account of them. For pains from a hot cause he recommends camphor-oil, or oil of violets with camphor. Mesue also treats of these complaints very minutely. When the pain is violent, he recommends injections containing poppies, henbane, mandrake, nightshade, and the like. Haly Abbas, in such cases, also approves of rose-oil, with opium, the juice of mandrake, &c. Alsaharavius varies his treatment according to the nature of the exciting cause. When it is caused by congestion of blood in the organ, he recommends bleeding, abstinence from wine, a restricted diet, and pouring warm oil into the ear. When it arises from a cold cause he approves of oil of costus, of spikenard, &c., and of applying to the ear a cataplasm of hot flour.

On ulcers of the ears. Aëtius and Alexander give various prescriptions for these cases. The fullest account, however, is contained in Galen (sec. loc.) When there is a discharge of pus, attended with pain, Octavius recommends alum, mixed with honey and oil. When ulcers of the ears are recent, Mesue recommends injections of honied water, wine and honey, vinegar and honey, or the like, by a syringe. They are to be dried

COMM. by means of olibanum, or sarcocolla dissolved in wine. He also praises myrrh, aloes, alum, and red arsenic, as ingredients in the applications to ulcers of the ears. When the ulcers are chronic, they are first to be cleansed by such applications as the decoction of wormwood in wine, or oxymel of squills, with a small quantity of the flowers of copper; then they are to be dressed with the usual incarnants; and, lastly, they are to be dried or cicatrized by compositions containing aloes, myrrh, and frankincense. When the ulcers are foul, he and Serapion recommend escharotics, such as the scoria æris. Haly's applications are quite similar. For sanious discharge he recommends us to wipe the ear with a piece of cloth wrapped round a probe, and dipped in an astringent solution. He directs us to remove fungous flesh by an operation, or with the ointment of flos æris. In this case Celsus recommends applications, consisting of verdigris and honey, or frankincense, or squama aris triturated with red arsenic. These powerful ingredients enter into some of the compositions recommended by Rhases.

For vermes in the ear. All the ancient authorities in this case recommend acrid and bitter injections. Wormwood, hellebore, nitre, calamint, birthwort, and sulphur are the common ingredients in the compositions recommended by Galen, Alexander, Aëtius, Oribasius, Celsus, Mesue, Serapion, Haly Abbas, Alsaharavius, and Rhases.

On calculi and the like which have fallen into the ear. Alexander, Aëtius, and Haly Abbas recommend similar means, and also direct us to compress the patient's nose and mouth, and to make him sneeze. Galen, copying from Archigenes, gives similar directions. This subject is more fully treated of in the Sixth Book.

On noises. These are fully treated of by Galen. (Sec. loc.) He remarks that they commonly arise from indigestion, excess of wine, violent vomiting, or the improper application of medicines to the ear. He says the disease sometimes arises from excessive sensibility, in which case he mixes with the injections the juice of mandragora, poppies, or the like. Our author's applications are taken from Alexander. Celsus treats of this affection very circumstantially, and modifies his application according to the circumstances of the case. He recommends particular attention to the diet, and injections, such as castor

with vinegar, oil of iris, or oil of bays, or myrrh and nitre, with roses and vinegar. When local applications do not succeed, Haly states that the disease is occasioned by an affection of the brain or auditory nerve. Alsaharavius treats of the complaint with singular precision and at great length. (Pract. iii, 4.) Comm.

On deafness. On this subject Galen gives copious extracts from Apollonius and Archigenes, from which the aurists of the present day might derive perhaps some information. In deafness occurring suddenly he recommends fomentations with the decoction of wormwood. Aëtius copies from him. Alexander is very particular about the general treatment, recommending emetics of hellebore, drastic purgatives, errhines, topical applications, exercise on horseback, change of place, shaving the head, and applying leeches to it, or a sinapism, or using friction, and even opening the arteries. Celsus directs us to examine the meatus, and if any scab of a sore or sordes appear in it, to inject warm oil, ærugo with honey, or the like; and afterwards to syringe it with tepid water. When the sordes is hard, it may be first softened by an injection of vinegar with a little nitre. Haly Abbas directs us to mix mustard with figs, and apply upon a tent for three days. As an injection he recommends castor dissolved in oil of dill, and the juice of rue. When it proceeds from bile, he recommends hot purgatives and things of an attenuant nature. According to the nature of the exciting cause, Alsaharavius applies various remedies, such as purging, gargles, fumigations with decoctions of stimulant herbs, detergent oils, such as those of dill, chamomile, &c.

Aaron, one of the authorities quoted by Rhases, states that deafness sometimes arises from congestion of blood about the ear; and, in that case, recommends local bleeding and an attenuant diet, with fomentations of hot oils, and the like. When it arises from obstruction, he directs the use of injections containing hellebore, vinegar of squills, &c.

For contusions of the ears. Galen gives various prescriptions for this case. Similar ones occur in Aëtius and Oribasius. Modern aurists forbid to bandage the ears tightly.

On parotis. Celsus properly directs that if the gland swell without any other disease, applications to produce resolution should be first tried; but if the system is labouring under disease, that the swelling is to be brought to a suppuration, and

COMM. opened as soon as possible. It is from Galen, however, that all the subsequent authorities copy their account of parotis. He lays it down as an established rule of practice that no attempt is to be made to discuss the swelling by repellent applications, but that suppuration is to be encouraged by the proper means. When there is plethora of blood, he allows venesection; and, when attended with pain, he recommends paregoric cataplasms of linseed, fenugreek, chamomile, and the like. When any hardness remains, he prescribes some of the malagmata, or emollient plasters. He informs us that Archigenes applied figs boiled and pounded. Octavius Horatianus and some of the others mention this application. Of the subsequent authors, although they contain little additional information, Alexander may be referred to as one who has treated of the complaint very fully and judiciously. He recommends bleeding before having recourse to topical applications.

The Arabians adopt the views of the Greeks. Alsaharavius directs the use of diachylon plaster as a maturative application. When the inflammation runs high he approves of bleeding.

SECT. XXIV.—ON THE AFFECTIONS OF THE NOSE, AND OF THE SENSE OF SMELL.

When the faculty of smell is impaired, but the speech remains uninjured, it is to be suspected that the anterior cavities of the brain are affected, being impaired either by a simple intemperament, or a collection of noxious humours. But if the voice be at the same time impaired, and have become thick, it is to be conjectured that the affection proceeds from certain noxious humours obstructing the ethmoid bones. Having ascertained the intemperament of the brain from the symptoms often mentioned, use the opposite remedies. Evacuate the humours by masticatories, and more particularly by powerful errhines; but apply attenuant aromatics as for catarrh. But if you suspect a plethora of the whole body, in the first place evacuate it by venesection, or by purging with hiera. Do so likewise for polypus and ozæna. Then use the topical applications. Theriac also is drunk with great advantage. Polypus is a preternatural tumour formed in the nose, resembling the flesh of the polypus.

The sarcoma is a substance of the same kind; but ozæna is a putrid ulcer formed by a defluxion of acrid humours.

For polypus and sarcoma. Of the flakes of copper, dr. viij; of copperas, dr. vj; of sandarach, dr. iv; of black hellebore, dr. ij. Blow in, and use confidently, as being an excellent remedy; for in thirteen days it will prove of manifest service. Copperas alone with vinegar is of use.—*Another:* Of the rind of pomegranate, dr. xij; of copperas, dr. x; of chalcitis, dr. viij; of bull's gall, of amomum, of myrrh, of calamint, of horehound, of each, dr. iv; of saffron, dr. ij; of white hellebore, dr. iv. Use in a powder.—*Another:* Touch with levigated diphryges (*husk of brass?*), and distend the nostrils with the pledget from lamp-wicks.

For ozæna. Of misy, chalcitis, and myrrh, of each, dr. vij; of copperas, dr. vj; of fissile alum, of galls, and of the flakes of copper, of each, dr. iv; of round alum, dr. ij; of frankincense, dr. j; of vinegar, one sextarius. Boil the whole in a vessel of copper, and when of the consistence of honey, use upon tents.—*Another:* Of verdigris and flakes of copper, equal parts. Use in a dry state.

For fetid smells of the nose. Of myrrh, of acacia, and of amomum, of each, dr. j; mix with boiled honey, and direct that it be glued to the extremity of the septum narium.—*Another:* Of amomum, of myrrh, of dried roses, equal parts; mix with nard ointment, and anoint with it. The malagma of hedychroum with wine produces the same effects.

For ulcers in the nose. Of whitelead, lb. j; of litharge, oz. iij; or of the dross of lead, oz. iij; of burnt lead, (see that all be washed); mix with wine and myrtle oil.

For those ulcers called sweet. Of litharge, dr. iv; of fresh rue, dr. iv; of fissile alum, dr. ij; mix with myrtle oil and vinegar.

Sternutatories. White hellebore, castor, pepper, fuller's herb, either alone or together. They must not be blown in, but applied with a feather or the end of a finger to the innermost parts of the nose. If the sneezing continue too long from the use of the medicine, it may be appeased by injecting into the nostrils some nard, or rose-oil, or sweet oil. Sweet-scented things, likewise, appease sneezing, as anise, and the pounded chaff of basil. In all these cases the head must be dried by detergent ointments (*smegmata*) of nitre and pumice-stone, or we may use that which is called Æsculapium, and the soap of Constantine, the Cappadocian salts, and the like.

For hemorrhage from the nose. Of bleeding from the nose in fevers we have treated in the Second Book; but we shall now treat of it when it arises from any other cause, and is difficult to restrain. Triturate chalcitis, and apply upon the tent formed from lamp-wicks, or the one called priapiscus, soaked in water, and press it into the nostrils; or burn an eggshell, and add to it of galls one half; or touch it with Indian lycium, or blow in the ashes of burnt ass-dung, or press out the juices from it, and inject into the nose; or let the person smell to the vapour of lapis molaris heated and plunged into vinegar; or use the following obstruent preparation: Of the manna of the frankincense tree, p. j; of aloes, p. ss; mix with the white of an egg, and use, by means of a tent made of lamp-wicks, having added externally to it the down of a hare; or apply to the nostril the preparation called Lysimachium; or apply for a length of time a large dry cupping-instrument to the hypochondrium of the side from which the blood flows; or stuff the ear firmly; or apply sponges out of cold water to the forehead; or apply a cupping-instrument with scarifications so as to detract blood; and sometimes it will be proper to let blood from a vein, if this be not contra-indicated; and to apply ligatures to the extremities, more especially the arms and thighs, as if for venesection. Direct motion to be made with them, exerting the hands by rubbing, and the feet by walking; for when the veins there are filled with blood, the parts about the nose will have a smaller supply of it. But a sponge soaked in cold oxycrate and bound externally to the bleeding nostril will often accomplish the purpose. It is best, however, to stuff the nose first with a long tent in the form of a wedge.

COMM. COMMENTARY. Consult Hippocrates (de Affect. et alibi); Galen (de Med. sec. loc. iii); Celsus (vi, 8); Cælius Aurelianus (de Mor. Tard. ii, 1); Oribasius (Loc. Aff. iv, 45); Alexander (iii, 8); Aëtius (vi, 90); Actuarius (Meth. Med. iv, 12); Nonnus (92); Scribonius Largus; Marcellus (de Med. 10); Octavius Horatianus (i, 11); Serapion (ii); Mesue (de Ægr. Narium); Avicenna (iii, 4); Albucasis (ii, 24); Haly Abbas (Theor. ix, 15; Pract. v, 68); Avenzoar (i, 5); Alsaharavius (Pract. ii); Rhases (ad Mansor. iv, 45; Divis. 40; Contin. iv.)

Of polypus. Hippocrates describes five species of polypus.

The first is represented to be like a piece of torn flesh hanging in the nostril, and is to be extracted. The second consists of hard flesh which fills the nostril, and is to be treated by the cautery, with the application afterwards of the flos æris to the part. The third is a round and soft piece of flesh growing from the cartilage, and is to be extracted by a ligature, which operation he describes minutely. The fourth is of a stony hardness, and is to be cut all round with a scalpel, then burnt, and the part touched with flos æris. The fifth grows from the top of the cartilage, and is to be burnt. COMM.

Galen gives various prescriptions from Archigenes, Asclepiades, Lampon, and others, for removing polypus. The most active ingredients in them are copperas, burnt copper, verdigris, alum, chalcitis, and arsenic. One of the simplest of Galen's prescriptions consists of arsenic, quicklime, and white hellebore, which are to be triturated together and applied. Another, named from Antonius Musa, is a powder consisting of equal parts of arsenic and copperas. We can from experience speak of the good effects of a similar application; and would, therefore, wish to call the attention of the profession to this method of curing polypus. That it may prove dangerous if misapplied cannot be doubted, but in the hands of a cautious surgeon such an application will be found both safe and effectual.

Celsus forbids us to meddle with the disease when it is of a cancerous nature. But when soft it is to be cured by an operation. He adds that it may sometimes be made to drop off, if touched by means of a tent or pencil with the following composition: 'Minii Sinopici, chalcitidis, calcis, sandarachæ, singulorum, p. j; atramenti sutorii, p. ij.' We need scarcely say that all these ingredients are powerfully caustic.

Scribonius gives prescriptions similar to those of Galen.

Octavius Horatianus says he has seen the tumour drop off after such applications as arsenic with honey have been used.

Aëtius gives prescriptions for removing polypus without incision or burning. One of the most simple of his compositions is a powder composed of alum, ginger, red arsenic, burnt copper, and galls.

Alexander, like the others, recommends escharotics, such as misy, copperas, and chalcitis. Marcellus makes mention of the same.

COMM. The Arabians imitate the practice of the Greeks. Serapion gives a prescription containing arsenic, copperas, black hellebore, &c. Avicenna describes the treatment by ligature, extraction, burning, and septic applications. He prefers the operation. Mesue treats with great precision of the different modes of cure. When the tumour is not large it may be removed, he says, by septic applications. His prescriptions contain arsenic, alum, flos æris, &c. Haly says that when a polypus is hard and cancerous it is incurable, but when soft, it may be removed by applying septic substances, such as flos æris, arsenic, and the like. Alsaharavius describes the two species of polypus, the cancerous and the fleshy. For the latter, besides the operation, he recommends us to introduce a thread smeared with the Egyptian and green ointments. Several of the authorities quoted by Rhases approve of the septic applications prepared with arsenic, vitriol, oil of oleander, alum, and the like.

The ancient method of removing polypus with septics is mentioned by Guy of Cauliac, and other surgical writers of that age.

For ozæna Celsus recommends stimulant and escharotic applications containing copperas, lees of oil, turpentine-rosin, squills, &c. They are to be applied by means of a specillum or probe wrapped round with wool.

The prescriptions given by Galen from Archigenes and Asclepiades contain misy, chalcitis, burnt copper, orpiment, red arsenic, alum, red nitre, myrrh, saffron, &c. The other Greek authors do but copy from him on this subject.

Avicenna recommends such aromatics as amomum, cloves, and roses, with camphor, hellebore, and the like. Haly makes no mention of escharotics, but recommends aromatics, such as marjoram, cloves, amomum, myrrh, and such like substances. He directs us to purge with hiera, and to gargle with mustard. The substances which enter into the compositions of Alsaharavius are very similar to this. The ingredients in Rhases' applications are mostly desiccants and aromatics; but a few of them contain escharotics, such as vitriol and red arsenic.

On ulcers. Galen's prescriptions contain burnt lead, burnt antimony, ceruse, litharge, and the like. Avicenna and Rhases praise the powder of Ruffus, which contains alum, galls, cyperus, myrrh, saffron, and arsenic. For the sweet ulcers Avicenna re-

commends the same applications as our author. Those of Haly COMM. are nowise different.

Sternutatories. Similar lists of substances for exciting and appeasing sneezing are given by Aëtius, Nonnus, Avicenna, and others.

On bleeding at the nose. Most of the remedies mentioned in this Section are taken from Galen (sec. loc. and Meth. Med.) Aëtius repeats his directions (vi, 94.)

Avicenna has surpassed every other author in the accuracy with which he details the phenomena and treatment of epistaxis; but his account is too long for us to do justice to it. His local applications consist of styptics, incrassants, and caustics. He very properly inculcates the propriety of producing revulsion and evacuating the general system by bleeding at the arm, which, he says, should be carried the length of producing deliquium animi. He directs us to apply ligatures to the testicles and extremities, to place the patient in water cooled with ice, and to pour the same upon his head. He says a man will lose from twenty to twenty-five pounds of blood before he dies. Haly's treatment agrees in most respects with that of Avicenna. He directs us to pour water upon the head, to apply to the forehead a plaster of galls, roses, &c., or a piece of cloth soaked in the infusion of roses cooled with snow and vinegar. He also makes mention of general bleeding, and the application of a cupping-instrument to the nape of the neck. Alsaharavius cautions us not to stop a critical epistaxis. Like Haly, he recommends us, as a general practice, to bleed from the arm if the strength be good, to apply a cupping-instrument to produce revulsion, to pour cold water upon the head, and to snuff up the nostrils water impregnated with the virtues of such astringents as galls, alum, camphor, roses, &c. One of the styptic powders recommended by Rhases contains quicklime, vitriol, galls, and red arsenic. He also directs snow to be applied to the head. In extreme cases he approves of the cautery.

Respecting the manna thuris, mentioned in this Section, see Bernard's Nonnus (96.) Dale thus explains it: "Manna thuris, offic. sunt micæ, fragmenta, pollen, et farina thuris, quæ ex collisione, dum in saccis vehitur, colliguntur. Alii autem per mannam thuris grana ejusdem intelligunt." (Pharmacol. 381.)

SECT. XXV.—ON AFFECTIONS OF THE FACE.

How to preserve the face free from wrinkles. Of frankincense, dr. iv; of fucus, dr. iij; of washed litharge, dr. viij. Dissolve them all in a decoction of bruised ichthyocolla, make trochisks, and use.—*Another:* Of ivory shavings, dr. viij; of male frankincense, of ichthyocolla, the same quantity. Use as aforesaid.

For darkness of the face. Of iris, of ptisan, of bruised beans, of each a sextarius and a half; of sal ammoniac, of burnt hartshorn, of ammoniac perfume, of each, oz. ij. Dissolve in water, and make trochisks, and having again triturated with water, anoint before bathing.—*Another:* Of ptisan, of tares, of frankincense, of bruised beans, of Illyrian iris, of aphronitrum, of costus, of each, the fourth part of a chœnix; bitter almonds, xx in number; form with the white of an egg and the milk of an ass, and use as aforesaid. The trochisk peponatus also answers well.

For freckles and lentigo. Of toasted Cimolian earth, half a hemina; of toasted aphronitrum, dr. viij; of the flour of tares, dr. iv; of the refuse of bull's gall, dr. viij. Triturate and use.—*Another:* Of the lees of wine, dr. x; of the flour of tares, dr. x; of bruised beans, dr. x; of white hellebore, dr. v; of aphronitrum, dr. x; of alcyonium, dr. x. Triturate, and rub with it.

For bruised spots, or hypopia. First foment with the decoction of fenugreek, and afterwards with that of melilot, mix the collyrium of Nilus from roses with water, and anoint; then use the myrrh collyrium. If these do not produce the effect, anoint with the collyrium of burnt sandyx; or apply hyssop with water; or bind hyssop into a piece of rag, dip it in warm water, and foment; or foment with strong salt water, and rub down the skin of radish with honey, and apply. This answers also for chronic cases. For chronic spots and lividity, take of Cretan hartwort, two parts; of Samian earth, one part; apply with honey, taking care that it do not produce an ulcer.—*Another abstergent application:* Of hyssop, of thapsia, and of cassia, of each, dr. ij; of wax, dr. ij; of turpentine, dr. j. Apply, taking care that it do not occasion an ulcer, and on that account removing it frequently.

For vari or warts. They are small hard tumours about the

face. Anoint, by rubbing with oxymel; or triturate litharge with turpentine and some white oil, and anoint by rubbing; or rub in fissile alum with turpentine; or triturate bitter almonds in vinegar, and rub. *For callous vari*: Of Gallic soap, dr. iv; of frankincense and ammoniac, of each, dr. j. Dissolve in water, and anoint; after an hour, wash away.

For vari, hairs, and roughness of the face. Of wax, dr. x; of turpentine, dr. j; of mistletoe, dr. ij; melt, adding a small quantity of oil, and scrub the face with it, for it takes out the hairs by the roots.—*Another:* Apply powdered poppy, or penny-royal, with salt and vinegar.

The cerate of Thais, for rendering the face ruddy. Of saffron, of madder-root, of fucus, of frankincense, of myrrh, of each, dr. ij; mix with calf's fat and mastich oil, and then anoint, and after a little interval wash away with a sponge out of hot water. These applications for the face will also answer for other parts of the body.

COMMENTARY. Most of the authors referred to in the preceding Section may be consulted on these complaints. COMM.

This Section is mostly copied from Oribasius (de Loc. Affect. iv), who, however, is greatly indebted to Galen (De Med. sec. loc. v.) Aëtius gives a long list of compositions for these complaints of the face, and to it the lovers of personal appearance are particularly referred. Celsus seems to have thought it necessary to make an apology for treating of these trifling complaints: "Pæne ineptiæ sunt curare varos, et lenticulas, et ephelidas; sed eripi tamen fœminis cura cultus sui non potest." His applications are like those of our author. For vari he recommends equal parts of rosin, fissile alum, and some honey. Ephelis, he says, is removed by rosin, with a third part of fossil salts, and a little honey.

The φάκος and ἐφηλις are, we believe, the lentigo and maculæ of Haly Abbas. (Theor. viii, 18; Pract. iv, 15.) His remedies consist of bitter almonds, mercury killed (sublimed?), mustard, with the oil of figs. The ἴονθος is his morum. For it he recommends the flos æris and other stimulant applications. Alsaharavius speaks of the juice of the wild cucumber, the root of iris, pine-gum, and if these are not sufficient, venesection. He treats minutely of these affections of the face. (Pract. vi.)

COMM. The ἴονθος is the acne of Drs. Willan and Bateman. Galen says these affections are to be removed by emollient and discutient applications in general. He treats very fully of hypopion or ecchymosis of the face. For it Alsaharavius recommends an application consisting of the infusion of radish and red arsenic. (Pract. iv, 4.) This must have been a powerful stimulant. Marcellus recommends to apply frequently a new sponge soaked in hot salt water. (De Medic. xix.)

Rhases describes this affection by the name of *pannus faciei*. Among the ingredients of his compositions we remark fenugreek, ammoniac, frankincense, liquid pitch, &c. Some of them contain arsenic. He also recommends scarifications.

SECT. XXVI.—ON AFFECTIONS OF THE MOUTH; AND, FIRST, OF THE TEETH.

The teeth are pained without inflammation of the gums, sometimes from pain attacking the body of the teeth, and sometimes from the nerve which enters them being affected. Wherefore they require the strongest remedies; the greater part of which are prepared from the most acrid vinegar. When the gums are pained from inflammation, the best application is oil of lentisk retained in the mouth in a tepid state. But see that it is new; for the older it is so much the worse is it for this purpose. This general rule ought to be observed, to evacuate first whatever humour prevails in the general system.

For inflammation of the teeth. Wash with vinegar in which have been boiled galls, or the root of winter-cherry, or the seed or leaves of henbane, or pennyroyal, or the juice of nightshade, or the root of capers, or the leaves of myrtle, or poley, or the root of the wild cucumber, or the leaves of rue with oxymel, or hartshorn, or the vinegar of squills, or pellitory with hyssop. To the eaten part of the tooth apply storax with opium, or galbanum, or sulphur vivum with lycium; or, let the patient inhale the steam from the seed of henbane through a small funnel. And the antidote of Philo, if applied round the tooth, removes the pain. When there is a defluxion on the teeth, rinse with a decoction of myrtle, lentisk, and galls, or of Syrian sumach, or of the flowers of the wild pomegranate, or of its rind. Sprinkle

also of salts two parts; of burnt alum extinguished in vinegar and pulverized, one part; then wash with wine. For bloody gums, sprinkle fine alum, or rinse with aloes in wine, or with the root of bramble boiled in wine, or Syriac sumach. When the gums both bleed and are affected with a rheum, burn pickled tunny in a pot until it be reduced to ashes, with which touch the parts. Loose teeth are fastened by being sprinkled with aloes, or Syriac sumach, or fissile alum, or galls, or the root of bramble, either by themselves or boiled in wine.—*Another:* Pulverize the bark of green nuts, and to the expressed juice add Minnæan myrrh and fissile alum, and mix together, and use, by pouring it into the mouth, and put upon the gums of the pained tooth, which it will cure.—*Another:* Triturate together garlic, pepper, and staveacre; put into a linen cloth; make small balls of it, and change frequently; by which means you will purge the humour in the head, and effect a cure of the teeth.

For loose teeth, running gums, and for every spreading ulcer in the mouth. Of burnt chalcitis, dr. xij; of calamine, dr. viij; use in powder with vinegar.

How to remove the teeth without pain. Apply flour with the juice of spurge, and above it an ivy leaf, and leave it for an hour. They will spontaneously break in pieces.

A dentifrice, also for parulis, or gumboil. Of that kind of alum called plinthitis, oz. iv; of sal ammoniac, oz. iv; of myrrh, of costus, of pellitory, of each, dr. iv; of pepper, eighty grains.

For parulis. Of sulphur vivum, of pepper, of fissile alum, equal parts. Parulis is an inflammation in a part of the gums, which, not being resolved, suppurates. Having suppurated, and being divided with a scalpel, it is to be kept separate with a tent. Epulis is a fleshy excrescence from inflammation on the innermost dens molaris, being attended sometimes with fever and pain. It must be repressed; and, therefore, we must use the species of verdigris called *xyston*, either by itself or with an equal part of galls, or burnt sori, or burnt alum, or galls alone, or the flakes of copper triturated with vinegar for a sufficient number of days and dried.

A dentifrice. The burnt roots of birthwort, burnt hartshorn, with some mastich.—*Another:* White salts mixed with honey, and wrapped in the leaves of the fig-tree, and burnt until reduced to ashes.—*Another:* Buccinæ filled with salt and burnt;

land snails burnt with honey; unwashed wool burnt with a little salts. With each of these, for the sake of fragrance, let there be mixed the schænanth, or spikenard, Indian leaf (*malabathrum*), or cyperus, or iris.

An application which will whiten the teeth, repress swelling of the gums, and produce fragrant breath. Of pumice-stone, of roasted salts, of iris, of each, dr. iv; of cyperus, dr. v; of spikenard, dr. j; of pepper, dr. vj; pulverize, and use.

For teeth set on edge. Painful feeling in the teeth is relieved by chewing purslain, or by rubbing oil of unripe olives, or by lees of oil boiled in a copper vessel to the consistence of honey, and rubbed in after being long kept.

For worn teeth. For worn teeth, apply, of bay-berries, of fissile alum, of the climbing birthwort, equal parts.

For corroded gums. Of the flowers of roses, dr. viij; of galls, dr. iv; of myrrh, dr. ij. Erosions and running from the gums are cured by washing with asses' milk, the decoction of olive leaves, or vinegar of squills; or by the following dry applications: the rust of iron, and flowers of the cultivated pomegranate. For swelling and fungous flesh of the gums, the juice of purslain retained in the mouth, the brine of pickled olives, warm oil of unripe olives, or lentisk oil, or oil of apples, or lees of oil, are applicable; and the following powders: the rust of iron or copper, the roots of birthwort, the seed of plantain, diphryges, calcined copperas, pomegranate flowers.

For fissures of the lips. Rub with boiled lees of oil. Or this: Of geese fat, with honey and turpentine, equal parts; of the flowers of roses, of the sordes of unwashed wool, of rose-oil, a small quantity.

On the disease called ranula. Ranula is an inflammatory swelling which forms below the tongue, particularly in children; wherefore rub the part with equal parts of misy and scraped verdigris (*xyston*) in powder; and to the chin apply the plasters called *antherum, sphærium,* and the *parygrum* from eggs. But, in adults, divide the veins below the tongue in the first place. —*Another,* (it answers likewise with aphthæ): Of scraped verdigris, of galls, of chalcitis, equal parts. With must it will form a gargle.—*Another:* Having previously rubbed with the flour of tares and honey, anoint with galls triturated in honey, or with the flowers of roses in like manner, or rinse the mouth with a decoction of olive leaves.

For inflammation of the tonsils. If the tonsils and uvula be inflamed in a fever, the most proper gargles are the decoctions of bran, or of roses, or of dates, or of Sebesten plums, or of dried lentil. When the inflammation is at its acme, or is on the decline, we may mix with them some honey, which we must not do at the commencement, nor during its increase, lest, by its acrid nature, it attract a defluxion. If it suppurate and burst, the patient must gargle with honied water, or with the decoction of lentil, or of roses, persevering until it is completely resolved; or we may give him to gargle some of the mixtures for rinsing the mouth. If pestilential ulcers in the tonsils take place, we may use the afore-mentioned remedies, and particularly apply the gargle from mulberries with hot water, or hydromel, having the flowers of roses sprinkled upon it, or costus or sumach, either in powder, or in a decoction; or a decoction of the dried leaves of horned poppy. It is bitter, and it answers best if you dissolve the juice, as we use it for collyria, in honied water. It may also be used with advantage by blowing in the dry herb, or applying it upon the finger. Care must be taken not to touch it with the hand, or, at least, it should be very gently. The trochisk of Andron is also of service. After the irritation from these things is removed, they should use a gargle of liquorice, or that from Scybelitic wine, and of saffron, and of Chian mastich, and of myrrh, and afterwards of starch and tragacanth. When the ulcer has stopped spreading, they may use a gargle of milk and Samian earth.—*Another, for antiades:* Pound sweet pomegranate along with its peel, and mix six parts of its expressed juice with one of honey, boil to the consistence of honey, and anoint.—*Another:* Of immature galls, oz. ij; of fissile alum, oz. j; of burnt sal ammoniac, oz. j; touch with it in powder.—*Another:* Of galls, dr. viij; of misy, dr. ij; of roasted salts, dr. v; use in powder. Antias is a scirrhous swelling of the tonsils.

On the uvula. When the uvula is inflamed, we must use the gargles recommended for inflammation of the tonsils, and those of a moderately astringent nature, such as the juice of pomegranate, applied by means of a small spoon, or the surgical instrument invented for the purpose; and these things may be applied either by themselves, or with moderately boiled honey, or the liquorice root may be mixed with the pomegranate juice.

The juice of the liquorice root enveloped in honey also answers well. The swelling may be repressed by the following substances: blood-stone, the Phrygian stone burnt, agerat, the composition from Phrygian stone used for complaints of the pudenda; also Samian earth, Eretrian, Sinopic reddle, the Lemnian earth, the oil of unripe olives by itself, or with some of these; and the fruit of the Egyptian thorn, and fissile alum. The seed and leaves of roses act more mildly, but still more so gum tragacanth, sarcocolla, and starch, which we must use, if pained when repressed by astringents. When the swelling is of equal thickness throughout, in which case we call the disease columella, we must trust to the gargles prepared from myrrh, saffron, and cyperus, and avoid all pressure, and rather anoint with a feather. The following composition answers well: Of Syrian sumach, dr. viij; of saffron, dr. iv; of costus, dr. viij; of rose-seed dr. iv. It may also be applied to the gums. But a thread of a sea-purple colour which has been bound round the neck of a viper, and strangled her, has wonderful effects as an amulet in relieving affections of the tonsils and neck, as Galen testifies.

For hemorrhages from the mouth. Apply the pounded leaves of leeks; or, dip a new piece of sponge in raw pitch, burn, pulverize, and use. It is also beneficial to rinse the mouth with a cold decoction of green or dried roses, that of vine tendrils, or of the leaves of lentisk, or of bramble, or of quinces, or of roses, or of grape-stones, or of lentils.

COMM. COMMENTARY. All the authors referred to in the twenty-third section may be consulted.

On the teeth. Galen, in particular, deserves to be consulted on diseases of the teeth, which he has treated of very fully in the fifth book of his work 'De Med. sec. loc.' He very properly combats the opinion, which we still sometimes hear maintained, that the teeth themselves are devoid of sensibility. He states that, once having toothach, he felt his tooth not only painful but throbbing. One of the best of our modern writers on the teeth, Eustachius, justly remarks that the teeth have a nerve of considerable magnitude distributed upon them, and are in fact possessed of exquisite sensibility. When the teeth ach, Galen says the strongest medicines are indicated, in order to repel and discuss the exciting cause. Most of these are to be pre-

pared with acrid vinegar. He then gives from Archigenes a long list of compositions for allaying the pain of toothach, from which most of those mentioned by our author are taken. One of the articles which most frequently occurs in them is alum, a solution of which in the spirit of nitre was lately much cried up as a cure for toothach. Of the great number of substances recommended to be put into the hole of the carious tooth it is difficult to form a judgment, as most of them are now never tried in such cases. Some of them seem plausible applications. One consists of pellitory with myrrh; another of opium and pepper; others contain ginger, poppy-juice, hyoscyamus, galbanum, castor, &c. He approves of hot fomentations, and of the heated flour of barley or linseed applied to the cheek. He speaks favorably of filling the hole in the tooth with hot wax. When part of a tooth projects, it is to be filed down with an iron file. For pains of the gums he recommends fomentations with vinegar, in which henbane has been boiled. Of dentifrices he has treated at considerable length, and it is from him that our author takes his list. COMM.

Scribonius Largus mentions alum among his remedies; and we may remark, by the way, that this medicine is recommended for toothach by many of the earlier modern authorities. (V. Guido de Cauliaco, vi, 2.)

Celsus delivers very judicious instructions for the treatment of toothach. He circumscribes the use of wine, enjoins restricted diet, and food which does not require mastication; then fomentations of hot water by means of sponges are to be applied to the tooth, and so forth. If the pain is more violent, the belly is to be opened, hot cataplasms applied, and some warm liquid retained in the mouth, and often changed. The liquid may be a decoction of some narcotic, such as poppies, mandragora, and hyoscyamus. He praises hot oil applied by means of a probe wrapped round with wool. He also mentions compositions containing pellitory, alum, bitumen, and mustard. He directs us not to be in haste to extract the tooth.

Aëtius gives a variety of applications for removing teeth without an operation. One of them contains red arsenic; another sori and the juice of spurge. Modern dentists are ignorant of such remedies. His account of the nerve which supplies the teeth with sensibility is accurate, but borrowed from Galen.

Octavius Horatianus, like our author, affirms that the juice

COMM. of spurge (tithymallus) will make the teeth fall out. For the same purpose he likewise praises the power of pellitory and mugwort. After Hippocrates he approves of the application of small bags containing salts or millet.

The medicinal substances recommended by Marcellus, the Empiric, are the same as those already mentioned. He praises strongly a composition consisting of acrid vinegar, alum, and cedar rosin, boiled to the consistence of honey and applied to the carious tooth. To prevent hollow teeth from falling out he directs us to fill the hole with the gum which grows upon the ivy. The juice of poppies pounded in a woman's milk and applied to a carious tooth is said to remove the pain instantly. As a dentifrice he recommends finely-powdered glass with spikenard.

Cælius Aurelianus recommends abstinence, rest, and rinsing the mouth with some astringent decoction containing white poplar, mandragora, poppies, henbane with vinegar, hot oil, milk and honey, and the like. He applies bags containing hot flour. If the pain does not abate, venesection is to be had recourse to, a cupping-instrument applied near the affected part, and the belly opened afterwards by a clyster. Sometimes the gums are to be scarified or separated from the teeth by means of a scarificator. Respecting anodyne medicines, he remarks that they diminish sensibility, but do not remove pain. He says, like the other authorities, that the juice of the tithymallus, or spurge, breaks the teeth—"dentes infringit." He disapproves very much of early extraction, and mentions that Herophilus and Heraclides of Tarentum relate cases of persons who had died in consequence of this operation. He says that in the temple of Apollo at Delphos there hung a tooth-extractor of lead, which was meant as a hint not to exert great force in extracting teeth. For bleeding of the gums he recommends alum with honey, and the like.

Serapion, like the Greek authorities, mentions a variety of remedial means for diseases of the teeth. One of his prescriptions consists of burnt alum, with vinegar, salt, and sumach. When the pain is violent he directs us to fill the hole with opium or some other narcotic. Avicenna recommends general bleeding, the application of leeches to the gums, opening the ranal veins, and cupping below the chin. His compositions contain opium, burnt alum extinguished in vinegar, galls with vinegar,

and the like. He mentions the juice of tithymallus, and several other substances, as possessing the property of making the extraction easy. COMM.

Avenzoar recommends in particular bleeding from the ranal veins. Mesue's general treatment is very judicious, but similar to that of our author and the others. He also makes mention of alum and vinegar. He says that some apply the actual cautery to the tooth. Haly directs us to heat two needles red hot, and then, having dipped their extremities in oil, to burn the hole of the tooth with them. He recommends us to fill the hole with a composition consisting of pellitory, sal ammoniac, opium, and wax. Some of his applications contain arsenic. That this article would deaden sensibility, and might destroy the vitality of the diseased parts, we can readily suppose, but of course it would require to be used with extreme caution. Certainly not more than two grains should be used, and every precaution ought to be taken to prevent the patient from swallowing his saliva. Haly, like most of the others, makes mention of alum. Alsaharavius recommends general bleeding, cupping, scarifications, and leeches; then warm vinegar, or some warm anodyne infusion, is to be held in the mouth; or the part fumigated with the vapour of water in which opium, camphor, or henbane has been boiled. He speaks also of the actual cautery. Rhases recommends bleeding, cupping, alum in vinegar, opium, henbane, &c.

The dentifrices and applications to the gums recommended by the Arabians are similar to those of the Greeks. See in particular Haly Abbas (Pract. v, 78); Rhases (Cont. v); and Alsaharavius (Pract. viii, 2.) Like our author's, theirs contain such astringents and aromatics as balaustine, sumach, galls, spikenard, wild mint, cinnamon, salt of gem, and the like. The pumice-stone in particular was much used for this purpose; but, as Dr. Hill remarks, it is apt to hurt the enamel.

On ranula. Aëtius, Actuarius, and most of the other authorities recommend similar applications. They consist of astringents and escharotics.

Avicenna calls the ranula an enlargement and induration of the sublingual gland. He approves of nearly the same treatment as our author. He recommends in particular burnt vitriol and hermodactylus with the white of an egg. Alsaharavius recommends, in the first place, applications containing nitre, sal

COMM. ammoniac, and the like. If these do not succeed, caustics are to be applied, so as to occasion a blackening of the part. If this does not answer, an operation must be performed. Rhases makes mention of an application containing green copper, vitriol, &c.

For an account of the manner in which the veterinary surgeons treated ranula in cattle, see Columella (vi, 8), and Vegetius (Mulom. iii, 3.) They recommend the tumour to be opened and stimulants applied to it, such as garlic pounded with salt.

The disease which Hippocrates describes by the name of ὑπόγλωσσις appears to have been somewhat different from the one we have been treating of. The hypoglottis of Hippocrates was an inflammatory swelling of the tongue ending in abscess. When matter forms, he directs us to open the abscess. It is also described by Aretæus.

For inflammation of the tonsils and of the uvula. Since, as Galen remarks, the same treatment applies to inflammation of the tonsils and uvula, we shall treat of both together.

Aretæus has described inflammation of these parts with great accuracy and minuteness. He has also given a very circumstantial account of the ulcers which occur there. Some, he says, are common, mild, and not dangerous; others are uncommon, pestilential, and fatal. The latter are described as being covered with a livid or black crust. The ulcer, he says, is apt to spread to the tongue, or it passes down the trachea and proves fatal by occasioning suffocation. The disease, he says, is brought on by cold acrid substances, and sympathy with disease of the stomach or lungs. Children are most subject to it. It is endemial in Syria and Egypt. He gives a striking description of death occasioned by suffocation. With regard to the treatment, when the parts are inflamed, swelled, and threaten suffocation, he advises copious bleeding from the arm, acrid clysters, purgatives, ligatures to the extremities, astringent and emollient applications to the parts, cupping the hind-head or breast, and other such means. Respecting the pestilential ulcers, when attended with inflammation and sense of suffocation, he approves of clysters, venesection, gargles, fomentations, ligatures to the extremities, cupping, and so forth. When the disease is spreading, he directs us to burn the sore with powerful caustics, such

as alum with honey, chalcitis and the like. Sometimes, as he remarks, the uvula and parts there are eaten down to the bone. COMM.

Galen gives a long and very interesting account of these complaints intermixed with curious extracts from Archigenes. The general treatment consists of venesection, acrid clysters, and purgatives. The local applications are mostly of an acrid and austere nature.

When the tonsils suppurate, Aëtius directs us to open the abscess. He gives an interesting description of pestilential ulcers, which, however, is not very different from that of Aretæus. He approves of bleeding at the arm, suppositories, clysters, ligatures to the extremities, and so forth. The subsequent Greek authors follow him and Galen in their descriptions.

Marcellus, the Empiric, recommends for swelled uvula various escharotic applications containing chalcitis, flos æris, alum, &c.

Celsus delivers a brief account of ulcers of the internal fauces. He speaks in rather equivocal terms of warm cataplasms, fomentations and fumigations; but is, upon the whole, inclined to permit the use of them if there be no danger of cold afterwards. He very properly forbids such things as will irritate the parts. He does not approve much of gargles of vinegar, although recommended by Archigenes, whom he calls, "multarum rerum auctor bonus." He prefers emollient gargles at first, and afterwards repellent ones.

The Arabians treat inflammation of these parts like the Greeks. Avicenna follows closely our author's plan of treatment. Mesue approves of bleeding, clysters, and so forth. Rhases mentions bleeding and gargles with vinegar, the water of roses, and other astringents. In inflammation of the uvula, Haly Abbas recommends general bleeding, gentle purgatives, and astringent gargles containing alum, pomegranate flowers, sal ammoniac, and the like; and when these do not succeed, he advises us to have recourse to the operation. (See Book Sixth.) Alsaharavius recommends a plan of treatment perfectly similar, and, like Haly, directs us to have recourse to excision when other remedies fail. Alexander Aphrodisiensis says, however, that those who have had the uvula cut off die of consumption; and attempts to account for the operation having this effect. (Probl. ii, 3.)

Avicenna and the other Arabians make mention of the amulet recommended by Galen.

SECT. XXVII.—ON ANGINA, OR QUINSEY, AND THE COMPLAINTS ALLIED TO IT; IN WHICH THE SUBJECT OF THOSE WHO HAVE BEEN STRANGLED OR OTHERWISE SUFFOCATED IS TREATED OF.

When the parts within the throat are inflamed, the disease is called *synanche;* when those without it, *parasynanche.* In like manner, when the parts within the windpipe are inflamed, the disease is called *cynanche;* and when those without it, *paracynanche.* All these complaints are attended with orthopnœa and pain, with difficulty of breathing, and in some cases with fever. There is redness of the face and neck, and swelling in some cases, and sometimes the mouth is kept constantly open, and they cannot swallow drink. Cases of cynanche are sometimes attended with a sense of suffocation. This disease attacks children but rarely, and then only from injuries of the spinal vertebræ occasioned by a fall, which case, being incurable, is not to be meddled with. In the others, we must immediately bleed from the arm, and take away not a great quantity at once, but in divided quantities; for from a rapid evacuation there is danger of suffocation, owing to the matters rushing to the affected part, if the patient should faint. Should they not be immediately relieved by it, we must open the veins below the tongue; or make incisions into the tongue itself, if it be swelled and protrude out of the mouth. The bowels are to be evacuated by acrid clysters; hot water is to be poured upon the feet, and the extremities firmly bound with ligatures. The neck is to be wrapped in unwashed wool, or in wool smeared with oil, and a cataplasm of raw barley-meal applied. At the commencement we may use the gargles described for inflammation of the tonsils, or the simple medicine from mulberry, with the decoction of sumach; but the best remedy is that from wild mulberry, and after that the compound application from mulberry, or the parts are to be anointed with the composition from walnuts. When the disease is at its height, we may add a little nitre or sulphur vivum, unless the acrimony prohibit their use. And dog's dung, dried and powdered, and rubbed in with honey, is a most excellent application, more especially the white kind; also the dung of wild swallows, in like manner. When the complaint is of long standing, we may use the liniment from besasa, or wild rue,

sometimes increasing and sometimes diminishing its strength, by the mixture of other medicines. Cupping-instruments or leeches are to be applied to the chin and neck, and the patients must use the stronger gargles from iris, hyssop, gith, southernwood, liquorice, dried figs boiled in honied water, or in the juice of rue with milk, or mustard with oxymel. If irritation arise from the use of them, we must give warm oil of the finest kind, or rose-oil by itself, or with the juice of ptisan or of fenugreek, to gargle with. The food should be honied water until the third day, after which the juice of ptisan, with some of the sweet drinks, and then the yelks of eggs in a liquid state. They may use spoon-meats made from chondrus, when deglutition is unobstructed, and take food suitable to their strength. When the disease is on the decline, we may get them to take exercise and the bath. The parts are to be enveloped in a cerate of the oil of rue; and we must have recourse to the other means of an analeptic nature.

In suspended animation, such as have the foam already at their mouth we must do nothing to, agreeably to the precept of Hippocrates (Aph. ii, 43); but the others may be resuscitated by pouring into their mouths vinegar and pepper, or the fruit of the nettle pounded in the strongest vinegar. It is with difficulty that they swallow it, but they must be compelled; and when the redness about the neck is dispelled, they immediately look up and recover. The same means are to be used towards those who have been wrecked in the sea; and, in fine, towards all those whose respiration has been suspended; for their heat is thereby resuscitated.

COMMENTARY. See Hippocrates (de Victu Acutorum, 39; de Prognos.; de Morbis, ii, iii); Galen (de Med. sec. loc. vi; de loc. Affect. iv); Aretæus (de Morb. Acut. i, 7); Alexander (iv, 1); Aëtius (viii, 48); Oribasius (Morb. Curat. iv, 71); Leo (iv, 10); Actuarius (Meth. Med. iv, 14); Celsus (iv, 4); Nonnus (123); Scribonius Largus (16); Cælius Aurelianus (Morb. Acut. iii, 1); Octavius Horatianus (ii, 6); Marcellus (de Med. 15); Serapion (ii, 18); Avicenna (iii, 9); Mesue (de Ægr. Gutturis); Avenzoar (i, 10); Haly Abbas (Pract. i, 26, and vi, 2); Alsaharavius (xi, 2); Rhases (ad Mansor. ix, 54, and iv, 25; and Contin. vii). COMM.

The plan of treatment recommended by Hippocrates can

COMM. scarcely be improved upon: general bleeding, opening the veins below the tongue, giving warm gargles and linctuses, shaving the head, wrapping the neck in soft wool, or applying fomentations to it, giving honey and water, or ptisan not cold, and administering clysters or purgative medicines. According to Le Clerc, he performed bronchotomy in extreme cases. He refers, we suppose, to lib. iii, 11, 'de Morbis,' but the language is not so precise as to make it quite certain that bronchotomy was there meant to be described. Sprengel supposes that he only introduced a tube by the nostrils into the trachea. He describes a species of cynanche in which there is no external swelling, and which proves fatal in the course of a day, or at least of a very short time. (Prog.) Cynanche, he says elsewhere, is apt to be determined to the lungs. (Aph.) Fever, again he says, attending ulcerated sore throat is bad. (Prog.) When the tonsils are swelled and red, he says it is dangerous to scarify them. (Ibid.) His commentator Stephanus remarks that when the disease becomes indolent the part may be burned or cut.

Aretæus states that the parts affected with synanche are the tonsils, epiglottis, fauces, uvula, the upper part of the trachea, and, if the inflammation spread, the tongue and jaws. He makes a distinction between cynanche and synanche. The former is attended with swelling of the parts and other well-known symptoms, of which he has given a striking description. In synanche (which he attributes to the *pneuma* being over-heated and over-dried), the parts, on the contrary, are contracted, and there is a strong sense of suffocation. This disease, he says, generally proves soon fatal, unless swelling and inflammation of the parts supervene, or erysipelas of the breast occur; in imitation of which, he states that a good physician will apply a sinapism or cupping-instrument to the chest to produce revulsion. In treating of the former variety of the disease, he begins with administering two clysters to evacuate the bowels and produce revulsion; he bleeds in the arm from a large orifice so as *nearly* to bring on deliquium animi, and he approves also of bleeding by opening the veins below the tongue: he recommends applications at first of an astringent nature, but, if suppuration be expected, he directs hot ones from fenugreek, hot fomentations, sponges squeezed out of the decoction of bay or hyssop, and the like, to be used. In the other variety, he recommends us to deter-

mine outwardly by all possible means, such as by applications containing nitre, mustard, &c. He says the application of fire would be most suitable in such cases, but as it cannot be applied from the situation of the disease, he recommends medicines which resemble fire (caustics), so as to stop the ulceration from spreading. The caustics and astringents mentioned by him are alum, galls, pomegranate rind, and in particular calcined *chalcitis*. The last was a vitriol resembling sulphate of copper. (See the preceding Section.) He mentions that in this variety some were said to have opened the windpipe, in other words to have performed laryngotomy. He does not believe, however, that the operation had ever actually been performed, and dissuades from attempting it, as it would only increase the evil; and he apprehended that the wound in the cartilages would never heal. From his account of synanche, Le Clerc concludes that Aretæus belonged to the Pneumatic sect; and although Ackerman is doubtful upon this point, we could point out many passages in his works which have quite satisfied us on this point. By *pneuma* was probably meant the vital heat in the body, acted upon by a spiritual substance within us, the same being a portion of that principle which the ancient philosophers called nature. It was truly a *vis medicatrix*. (See Morb. Chron. cur. i, 7.) COMM.

Celsus, like Aretæus, describes the two varieties of the disease, and recommends nearly the same treatment.

Galen, and after him Aëtius, give a similar account with great minuteness and precision. We cannot pretend to do justice to their treatment, and shall merely mention that, in the second variety, they praise mustard for a gargle, and elaterium as a purgative. It is worthy of notice that Galen describes a rare species of this disease, in which the tongue is so swelled that the mouth cannot contain it. (Meth. Med. i.)

Alexander's directions are most minute and judicious, but we must be content with stating that he approves of opening the ranal and jugular veins, and that his treatment is otherwise similar to that of Galen. This is the first mention of opening the jugulars that occurs in a medical author.

Octavius Horatianus we shall merely mention, in order to state that he has described the two varieties of the disease like the others.

Cælius Aurelianus gives a singularly accurate and circum-

COMM. stantial account of this disease, but it is so long that we can merely afford room to point out a few of his leading opinions. He approves of a fomentation made with a bladder half filled with hot sweet oil. He directs the patient to inhale the steam of hot water, and to have sponges squeezed out of it applied to the neck and throat. He approves of cupping the neck or of leeching it, and also of scarifying the tongue and fauces if they are much swelled. With respect to the treatment of the other sects, he blames Hippocrates for making too rapid a detraction of blood, and also for opening the veins below the tongue, which, he says, will only aggravate the evil, and may be productive of inconvenience, owing to the difficulty of stopping the bleeding. But, in particular, he finds fault with Archigenes for mentioning laryngotomy, and treats the operation as entirely fabulous and the fiction of that physician. His aversion to it is so strong that he pronounces it a crime. Before having done with this author, we may remark that Prosper Alpinus, the modern advocate for ancient Methodism, does not agree with Cælius in condemning the Hippocratic practice of opening the veins below the tongue. In his own case he had experienced the good effects of this practice. (Meth. Med. vii, 10.)

The Arabians, like their Grecian masters, describe the two varieties of the disease, and treat them accordingly. For the variety called synanche by the Greeks, they approve of hot gargles consisting of mustard, pepper, and the like. This resembles the modern practice of using gargles of Cayenne pepper. In the following passage, Rhases evidently points at the contagious synanche: "It happens on certain years in spring that a bad and destructive species of synanche attacks a great many persons. Wherefore at such a time it will be proper to anticipate the disease by venesection, abstracting blood from the legs with cupping-instruments, opening the belly, and gargling with rose-water, or infusions of sumach, mulberries, and nuts." Haly Abbas likewise states that the disease is sometimes epidemical. Rhases approves of general bleeding, of opening the sublingual veins, and of using astringent gargles at first, and afterwards maturative ones consisting of figs, sweet almonds, and the like. In his 'Continens' he seems to allude to bronchotomy. Alsaharavius describes the two varieties of the disease with great minuteness. He agrees with the others as to the

danger of that variety in which there is no swelling nor inflammation outwardly. Avicenna and other of the Arabians follow Alexander in recommending bleeding by opening the jugulars. The two kinds of angina, mentioned by the ancients, are described in similar terms by Sydenham, Boerhaave, and Van Swieten. The first variety, or common quinsey, is well known. The second is of less frequent occurrence. The modern authorities have found it as fatal as the ancients gave them reason to expect. The reader will find a very interesting commentary on Aretæus' description of malignant sore throat in a tract, 'de Recondita Abscessum Natura.' (Mangeti Bibl. Chirurg. i, 48.) It is the disease now called *laryngitis acuta*. COMM.

Haly approves of the treatment recommended by our author in cases of suspended animation. In treating those who have been in water, he directs, very improperly we are convinced, the patient to be hung by the heels, to favour the escape of the water by the mouth. It would appear, however, from the late experiments of Professor Meyer, that the ancients were correct in supposing that water is generally found in the lungs of drowned persons. When a person has hung by the neck for a time, and there is any prospect of recovery, Haly directs us, as soon as he can swallow, to make him gargle with oil of violets and tepid water, and to drink barley-gruel and the like.

SECT. XXVIII.—ON CORYZA, CATARRH, AFFECTIONS OF THE TRACHEA, AND COUGH.

All these complaints have this in common, that they are occasioned by the defluxion of a redundant humour from the head to the parts below. When, therefore, it seats in the nostrils, the disease is called coryza; when in the pharynx and roof of the mouth, simply catarrh; but when it attacks the larynx and arteria trachea, so as to occasion a roughness of the membrane which lines them, the voice becomes hoarse, and the disease is called branchus, or morbus arteriacus: these terms being applicable not only to the inflammatory roughness occasioned by a defluxion from the head, but also to that arising from vociferation and inhaling cold air. When the complaint is protracted, and the defluxion is carried down to the chest and lungs, it

gives rise to bad coughs. And a cough often arises from an intemperament; sometimes a hot one, as in fevers, and sometimes a cold, as in northerly states of the weather, which is rather a dry one. Cough is also sometimes symptomatic of some other disease, such as pleurisy, hepatitis, phthisis, or peripneumonia. Wherefore Galen relates that, in certain chronic cases of cough, chalazia (hail-stones) have been brought up from the chest. But Alexander relates that a certain heavy stone, like that which forms in the urinary organs, was brought up in a chronic cough, upon which the cough ceased. We ourselves have seen a discharge of stones with vomiting of blood, as we will describe more accurately when we come to that part. Those who have coryza and catarrh from exposure to heat have a sensation of heat about the parts, and a running of acrid and thin humours from the nostrils and mouth, and there is redness about the face and nose. When they are occasioned by cold, there is distension about the head and forehead, and obstruction of the ethmoid pores, so that the voice does not resound through the nose; and when they are protracted, cough supervenes, and expectoration of phlegm, which is sometimes unconcocted and fluid, and sometimes green. In some cases fever comes on, which does not alleviate the complaint when it proceeds from heat, but when from cold it promotes concoction.

The cure of catarrh and of coryza. When a hot intemperament prevails, those remedies will apply which suit with headachs from the same cause. They must have recourse to baths, and have a large quantity of hot water poured upon the head. The food most befitting are spoon-meats and eggs in a state to be supped, starch, sweet cake, sesame, rice, almonds, the fruit of the cones of pine, and all confections from milk. The wines which are drunk should be sweet and not old. The lohoch from poppy-heads, called diacodium, and other compound medicines for these complaints, are to be taken. When a cold intemperament prevails, and the disease is difficult to remove, a restricted diet is to be observed, and the head anointed with some heating and attenuating ointment, such as that of nard or rue. But the ointment of iris is not only to be rubbed in, but is also to be injected into the nostrils; and, internally, they are to be rubbed with frankincense and myrrh, with oil; and this more

especially when the coryza arises from cold. But these are remedied by odoriferous substances with burnt linen, or by gith and cumin burnt and bound up in a linen rag. Let them also smell to the cyphi seleniacum, and let it be rubbed into the forehead; and to it let there be added one of the antiphlogistic plasters, such as the Icesian, the Oxera, the Barbarum, and the Athena. For catarrh from cold it will be expedient to drink of cyphi, and to rub into the chest the juice of balsam by means of unwashed wool; or to apply calefacients to it, along with storax, the ointment of iris, or that of dill. Let them also use hot and concocting food. But when the matter is already concocted, a masticatory will answer well with them, and detergent ointments (*smegmata*) to the head, such as the soap of Constantine, and the like.

The cure of affections of the trachea, or hoarseness. For the complaint called arteriacus and branchus, those things already mentioned will apply; but, in particular, when an inflammatory affection of the trachea and larynx prevails, we must, at the commencement, use the emplastic remedies, until the inflammation become more moderate; such as those from Cretan sweet wine, tragacanth, gum, and starch, and a decoction of the fatty dates and that of liquorice, with rob, until it become of the consistency of honey. And we must use that class of electuaries called hypoglottides. But, above all things, the patient at this period must abstain from drinking wine; but when the inflammation becomes moderate, he may take some sweet wine. And let him use those spoon-meats which are made from honey and milk, with starch, and bread of fine flower, and almond emulsions; and let him take butter. When a humour remains fixed in the parts, he must have recourse to detergent remedies, such as the porridge of beans, and those things which are prepared from honey, cabbage, and well-boiled leeks. He may also take the hotter medicines, and those used for the cough, in the rob of dried figs, of frankincense, iris, turpentine, storax, galbanum, pepper, cinnamon, cassia, and the like.

On cough. Coughs are to be cured by the same method, attending only to this, whether they be occasioned by sympathy with other parts, such as a defluxion from the uvula or head, and whether they be symptomatic of other diseases; in which case, they are to be disposed of in the manner already men-

tioned, or as will be described afterwards. An exposition of the compound remedies follows.

Pills for catarrh and cough. Of storax, of myrrh, of opium, of galbanum, equal parts; mix with must, or pound by themselves in a mortar, and make into pills the size of a tare. Give three, four, or five at bedtime, and swallow with some must. These things are for an acrid and thin rheum.—*Another:* Of the seed of henbane, dr. xij; of pine-nuts, dr. vj; of saffron, dr. ij. Mix with rob or with must, and use.

An electuary. Of honey, oz. j; of butter, oz. ss. Boil together and give; and let the decoction of hyssop, of figs, of pine-nuts, and of iris, be swallowed.

Pills for more inveterate coughs. Of storax, dr. vj; of myrrh, dr. iiss; of turpentine, of galbanum, of opopanax, and of iris, of each, dr. ij; of white pepper, of nitre, of henbane-seeds, of the juice of poppy, of each, dr. j. Beat in a mortar without any liquid, form into pills, and use as formerly directed.

For roughness of the windpipe, cough, and bloody expectoration. Of bitter almonds whitened, xxv in number; of toasted linseed, dr. iv; of tragacanth, dr. ij; of pine nuts, xxx grains; the yelk of an egg roasted in dough. The tragacanth is macerated with water, and the whole mixed with must. If the sound of the voice be broken, mix honey instead of the must, more particularly when there is anything to expectorate.

An arteriac to be kept below the tongue for those who have lost the voice, for hoarseness, and bloody expectoration. Of tragacanth, dr. vj; of gum, dr. vj; of myrrh, dr. iss; of white pepper, xx grains; of saffron, dr. j; of liquorice-juice, dr. vj; the flesh of three dates; of Cretan sweet wine, q. s. The juice of the tragacanth alone placed under the tongue answers very well. Instead of the juice of liquorice, its decoction boiled down to the proper consistence may be substituted in quadruple quantity.

An arteriac for loss of voice, suiting also for strengthening the voice. Boil six leeks to a third part; throw them away, but with the decoction mix the juice of alica and honey; boil with them the yelks of three eggs previously boiled, stirring with a branch of dill.

For coughs. Of pennyroyal, oz. ij; of pine-nuts, of bastard saffron, of linseed, of each, oz. j; of white pepper, oz. iv; mix

with boiled honey.—*Another:* Of hyssop, of pennyroyal, of pepper, of each, oz. j; of Macedonian parsley, oz. ss; of honey, a hemina.

For concocting an inveterate cough. Of honey, dr. xvj; of turpentine, dr. ij; of galbanum, dr. xiv. Having boiled them together, and having formed to the size of beans or of walnuts, let them be sucked.—*Another:* A dry cough is cured by the arteriacs, and also by the drinking of hot water; for, not being able to expectorate, owing to the thickness of the phlegm, they are assisted in so far by diluents. A decoction from hyssop, and iris, and pine-nuts, also answers with them.

A trochisk to be inhaled for a continued cough. Of storax, of pepper, of mastich, of Macedonian parsley, of each, oz. j; of sandarach, scr. vj; two bay-berries; mix with honey; and fumigate by throwing them upon coals, so that the person affected with the cough may inhale the vapour through a funnel. It answers also with those affected by cold in anywise.

COMMENTARY. All the writers referred to in the preceding Section (with the exception of Aretæus) may be consulted here. COMM.

Galen, in the seventh book of his work, 'de Med. sec. loc.' has treated of these diseases so fully that he may be said to have exhausted the subject. We can only afford room for a few of his general remarks. He states that the arteriacs, or compositions for affections of the arteria trachea, consist of three different kinds of medicines. First, those called by him obstruents, and answering to those now called demulcents, such as Cretan sweet wine, tragacanth, liquorice, and the like, which act by smoothing the asperities of the parts. Second, the acrid, containing cinnamon, turpentine-rosin, and the like. Third, the intermediate, consisting of the juice of ptisan, almonds, and the like. He gives a great number of compositions from Andromachus, Criton, and others, which might deserve attention. Of their ingredients some are expectorants, such as squills, myrrh, &c.; some demulcents, such as liquorice, tragacanth, &c.; and some narcotic, such as opium, mandragora, hyoscyamus, and hemlock. With the medicinal properties of the last-mentioned article (we mean the *conium maculatum*), which Dr. Paris commends so highly in diseases of the chest, the ancients were sufficiently well acquainted. For humid coughs Galen recom-

COMM. mends a composition of alum, opium, galbanum, and storax. He mentions lumbrici in the stomach as a cause of coughs. (Com. in Epid. iii.) Among the remedies mentioned by our author, by Galen, and by most of the ancient authorities, we may remark the inhaling the fumes of certain acrid medicines, such as yellow orpiment and sandarach, or realgar, i. e. red orpiment. Whether the practice be safe or not we shall not pretend to determine; but, unquestionably, it is recommended upon high authority; and therefore it is not true, as has been often stated, that this practice arose from the mistake of confounding the gum juniper, or vernix of the Arabians, also often called sandarach, with the sandarach of the ancients, or realgar. (See Bree on Asthma, p. 231.) We refer to Aëtius (viii, 61); Pseudo-Dioscorides (Euporist. ii, 33); Pliny (H. N. xxxiv, 55); Alexander (v, 4); Myrepsus (xli, 76); Serapion (ii, 19, and 24); and Rhases (Cont. viii.) The ancient veterinary surgeons used arsenic in fumigations for the coughs of cattle. See Vegetius (Mulom. iii, 67.) Platearius, a modern writer of the thirteenth century, recommends arsenic for chronic coughs, both in fumigations and taken into the stomach, and yet he distinguishes quite correctly the sandarach, or red arsenic, from the gum vernix. (De Simplici Medicina.) Some of the earlier writers on the venereal disease recommend fumigations with arsenic for syphilitic ulcers of the throat. (V. Aphrodisiacus, and Sect. XXIX of this Book.)

At the commencement of a common catarrh, Celsus advises to abstain "a sole, balneo, vino, venere;" but to use "unctione et assueto cibo." When the lungs become affected he recommends much friction and exercise on foot. He gives the following account of the origin of these complaints: "Destillat autem humor de capite interdum in nares, quod leve est; interdum in fauces, quod pejus est; interdum etiam in pulmonem, quod pessimum est." The idea of the disease originating in the head and spreading downwards prevails in all the ancient descriptions of the disease, and, we may mention, is now sanctioned by the authority of the illustrious Laennec. See, in particular, Aëtius, who copies, however, in part from Galen.

Alexander devotes a whole chapter to the consideration of these complaints. He forbids diuretics, because they carry off the thin part of the humours and leave the thick behind. Re-

specting the chalazia mentioned by Galen, and "the smooth, hard, and firm stone" said to have been expectorated by Alexander's patient, we have a few remarks to make. The passage in Galen's work where they are described is at 'de Loc. Affect.' iv, near the end. These sputa have been described by recent pathologists. Thus Andral calls them small clots, of a dull white, or inclining a little to yellow, from a small pin's head to a pea in size. (Clinical Medicine, 464, Engl. ed.) The modern authorities agree that they are indicative of phthisis. Aretæus describes by the name of pneumodes, and as a species of asthma, a diseased state resembling that which we are treating of. The symptoms are dyspnœa, cough, and wasting; pulse small, frequent, and feeble; the sputa, if any, small, white, round, and like hail. The disease proves fatal in the course of a year, and often ends in dropsy and anasarca. COMM.

The treatment recommended by the great Methodist Cælius Aurelianus is not much different from the practice of the other sects, only he enjoins a more rigid abstinence from wine and food of a heating nature. He also condemns the practice of inhaling the vapours of red arsenic (sandaracha), and the like. In protracted cases he recommends a change of place.

There is nothing original in the practice of the Arabians. Avicenna prudently forbids preparations of poppies after expectoration has commenced. For coryza Haly Abbas recommends, if the patient's age and temperament permit, bleeding, a spare diet, abstinence from wine, fumigations with the vapours of camphor, lignum aloes, vinegar, &c.; avoiding to lie on the back, and so forth. He treats at great length of coughs, distinguishing them according as they are seated in the throat, gullet, or lungs, and whether they be sympathetic or not. For hoarseness, he directs gargles from the seed of anise or fennel, or a decoction containing radishes, parsley, fennel, mastich, spikenard, iris, figs, &c. Alsaharavius treats fully of these complaints in much the same terms.

SECT. XXIX.—ORTHOPNŒA, ASTHMA, AND DYSPNŒA.

Those who breathe thick without fever, like those who have run fast, are said to be *asthmatic*, that is to say, to pant for

breath; and from their being obliged to keep the chest erect for fear of being suffocated, they are called *orthopnoic*. The affection arises from thick and viscid humours becoming infarcted in the bronchial cells of the lungs. Dyspnœa is a common symptom which accompanies these and many other complaints. The indication of cure in asthmatic complaints is to consume the viscid and thick humour by attenuant and detergent medicines. Wherefore the vinegar of squills will answer well with them, and the oxymel prepared from it; the baked squill itself when triturated with honey; the antidote called hiera, continued purging with drastic medicines, and vomiting from radishes. And, in like manner, the round birthwort may be drunk, the root of the great centaury, the fruit and root of cow-parsnip, the fruit of calamint, hyssop, iris, and gith. Put a sextarius of slaters, into an earthen vessel, roast upon the coals; when whitened, pulverize, and, mixing with boiled honey, give a mystrum thereof before and after food. If there be any urgent necessity, before doing all these things, open a vein and evacuate proportionably to the patient's strength; and stimulate the belly by clysters. Externally to the chest we may apply cataplasms from figs, the flour of iris, and of barley, containing rosin, wax, and honey; and iris and manna may be sprinkled upon them. Some benefit may also be derived from raw barley-flour, with rosin, wax, iris, and manna. We may use the more heating ointments, such as those of iris, dill, and rue. But the following application is particularly proper: Of pumice-stone, p. j; of burnt lees of wine, p. iv; of arsenic, p. j; of the schenanth, p. ij; of alcyonium, p. j; of aphronitrum, p. ij; pound, sift, mix with the ointment, and with it rub the parts about the chest, and use emollient ointments for attracting the humours.

A draught for asthmatics. Of poley, of southernwood, of castor, of ground pine, of ammoniac perfume, equal parts; mix with honey, and give.—*Otherwise:* Some give a spoonful of aphronitrum in three cyathi (cupfuls) of honied water.—*Another:* Of aphronitrum, dr. ix; of pepper, dr. j; of laserwort, dr. ss; give a spoonful in water.—*Another:* Of castor, of ammoniac perfume, of each, dr. vj; of pepper, xl grains; mix with must, and give to the size of a bean in honied water.—*Another:* Of mustard, dr. j; of the spuma nitri, three oboli; of elaterium, a diachylon (i. e. half an obolus): form the whole into eight trochisks, and

give two every two days; for they will evacuate upwards gently. To those who are choked for want of breath, give, of aphronitrum, dr. iij, with three cyathi of hydromel, and sometimes with cardamom, and it will relieve them immediately. It is also useful in ischiatic disease.

COMMENTARY. The following ancient works may be consulted: Hippocrates (Aphoris.); Galen (de Comp. Med. sec. loc. vii); Celsus (iv, 4); Aretæus (Morb. i, 11); Cælius Aurelianus (Morb. Tard. iii, 1); Aëtius (viii, 63); Oribasius (Loc. Affect. iv, 79); Actuarius (Meth. Med. iv, 4); Marcellus (de Med. 17); Nonnus (127); Octavius Horatianus (ii, 2, 12); Serapion (ii, 24); Avicenna (iii, 10, 1, 38); Mesue (de Ægrit. Pect.); Haly Abbas (Pract. vi, 8; Theor. ix, 20); Alsaharavius (Pract. viii, 5); Rhases (ad Mansor. ix, 56; Contin. viii.) COMM.

Our author's theory of the disease is borrowed from Galen, and seems very plausible. It being admitted by our best modern pathologists, that there is no organic alteration of structure in ordinary cases of convulsive asthma, it seems likely that the paroxysm is occasioned by thick and viscid humours infarcted in the lungs; or, most probably, in many cases from the system being loaded with such humours which nature casts off by the lungs. We need scarcely add, that it is now well ascertained that asthma is frequently produced by *engorgement* of the lining membrane of the bronchi, thus forming what is called the dry catarrh. Galen, like our author, maintains that the use of attenuant and detergent medicines is indicated. His internal remedies are squills, pepper, wormwood, opopanax, storax, sulphur, oxymel, millepedes, &c. He forbids all things which are either of a very hot or cold nature, as in either case they tend to thicken the humours.

Aëtius gives nearly the same account as our author, both having evidently borrowed from Galen. He strongly praises vinegar of squills, myrrh, pepper, and the like. In certain cases he advises the application of the actual cautery to the head (see Book Sixth, Sect. 1) under the impression that the disease is occasioned by a defluxion from it. He also speaks of burning the chest in several places for the purpose of making issues; and further recommends strong rubefacients.

Among the articles recommended by Marcellus, the Empiric,

COMM. for difficulty of breathing, we remark vinegar of squills, natron (*soda*), opium, horehound, &c. The first article, it will be perceived, among his remedies for asthma is vinegar of squills. Almost all the ancient authorities praise the virtues of squills in this disease.

Aretæus gives a good description of the symptoms of the disease, which he attributes to a humid, thick, and glutinous *matériel* in the lungs. He says, the lungs are primarily affected, and through them sympathetically the diaphragm, and parts about the chest which assist in respiration. But if the heart be affected, he adds, the issue is speedily fatal. Among the incipient symptoms he mentions flatulence of the bowels, restlessness, and latent heat by night. As the paroxysm proceeds, the cheeks become red, the nose sharp, the eyes prominent as if from strangulation, there is a *râle* even when awake, and still more so when asleep; the voice is humid and devoid of resonance, with an insatiable desire of cold air, panting, and orthopnœa. To these symptoms are added, paleness of the countenance, with the exception of the cheeks; profuse sweats about the face and chest; constant and difficult coughing, with little expectoration. His chapter on the treatment is lost.

As Oribasius, Actuarius, and Nonnus follow the principles laid down by Galen, we need not give any account of their opinions.

Octavius Horatianus adopts Galen's theory, which he thus explains: "Pingui autem et frigido phlegmate pulmonibus adhærente, cavernæ, vel meatus, quibus naturaliter spiritus redditur et accipitur, concluduntur; et ex hoc impedimento suspirium, vel anhelitus molestissimus, nascitur, ut sedendo magis quam jacendo respiret." He recommends bleeding, if not contraindicated; but, if that is the case, frequent abstinence. Among his internal remedies we remark oxymel, gum ammoniac, castor, and vinegar of squills. He approves also of emetics. He recommends stimulant applications to the chest, also fomentations and sinapisms. A long journey, he says, is beneficial.

Cælius Aurelianus disapproves of burning the head and of strong purging. He approves of bleeding, if the patient's strength permit, of clysters, cupping the breast, gestation, friction, vociferation, emetics from radishes, or even from hellebore, and of giving the vinegar of squills. He speaks favorably of

the cold bath. His description of humid asthma is very striking, and has been commended by late authorities on the subject. The sounds within the chest are thus described: "stridor, atque sibilatio pectoris, cum vocis debilitate." Comm.

Cassius discusses the question why there is a sibilant murmur in cases of orthopnœa, and decides that it is because the affection is a contraction and falling-in of the cells of the lungs, and the breath rushing through a narrow passage produces this murmur. (Prob. 82.)

Serapion recommends friction, exercise, squills, fumigations with arsenic, &c. Mesue also recommends arsenic in various forms. Avicenna's account is particularly full and judicious. He properly remarks that asthma is sometimes connected with derangement of the heart, liver, and stomach. Like the others, he approves of arsenic, both in pills and in solution.

Haly Abbas, like Galen, refers asthma to a collection of gross phlegm about the cells of the lungs. His remedies are of an attenuant and incisive nature, and he particularises the vinegar of squills. He cautions asthmatics to beware of indigestion, and, therefore, forbids exercise after food, but recommends it before a meal. After exercise he enjoins hard friction, no doubt with the intention of favouring the cutaneous perspiration. Rhases commends squills and the tepid bath. Like the others, he approves of inhaling the vapours of arsenic.

Vegetius, the veterinary surgeon, recommends squills with wine, assafœtida, and oil, for these complaints in cattle.

Respecting the use of arsenic in asthma, Prosper Alpinus remarks: "Præterea audent aliqui arsenicum summè exitiale venenum illis exhibere. Narrant quidam nepotem patris fratri decrepito orthopnoico, ut eum interimeret, clam in ferculo ex cucurbitâ parato porrexisse arsenicum, eoque non modo non interimisse decrepitum, verum et ab asthmate prorsus sanasse." (De Meth. Med. x, 13.) He states further, by the way, both in that work and in the one "de Medicina Ægyptiorum," that the Egyptians were in the practice, for the cure of asthma, of applying cones of cotton to the breast, and setting them on fire. Fracastorius, who recommends this practice of imbibing the fumes of arsenic, for contagious phthisis, speaks of it in the following terms: "Nonnulli antiquorum jubent Sandaracæ nidorem per anhelitum in pulmones trahi: quum autem Sandara-

COMM. cam dico non eam intelligi volo quæ vernix vulgo vocatur, sed quæ auripigmentum a nobis dicitur: porro nec per auripigmentum velim a te accipi priorem illam speciem quæ citrina est sed alteram, quæ est ruffa, et propriè Sandaraca vocatur." (Morb. Contag. iii.)

Dr. Hill, however, properly remarks that the arsenic of the ancients, or orpiment was a much more innocent substance than the factitious arsenic of the moderns. See also Cleaveland (Mineralogy p. 680.) The arsenic of the ancients, in fact (as will be shown in the proper place), was the mineral substance called yellow orpiment, consisting of sixty-two parts of arsenic and thirty-eight of sulphur, according to the analysis of Klaproth. The sandarach was *realgar*, which consists of seventy-five parts of arsenic and twenty-five of sulphur.

SECT. XXX.—ON PERIPNEUMONIA.

Peripneumonia is an inflammation of the lungs, supervening, for the most part, upon violent catarrhs, cynanche, asthma, pleurisies, or other complaints, but being sometimes the original affection. It is accompanied with difficulty of breathing, an acute fever of the ardent type, weight and tightness of the chest, a râle, a seizure of the face with great fulness, the morbific matter being determined upwards like fire. Wherefore the cheeks appear red, the eyes swelled, with falling down of the eyebrows, and the cornea appears somewhat glossy. When the sypmtoms incline to a more ardent type, it is to be apprehended that the inflammation is of an erysipelatous nature. When the disease originates from the conversion of other diseases into this, we must not have recourse to venesection, more especially if the diseases be of a chronic nature, and if blood had been previously let. But, in the remissions, clysters are to be injected into the bowels, which are moved with difficulty; or, when nothing contra-indicates, large cupping-instruments with scarifications may be frequently applied to the breast and sides. But if the peripneumonia was the original affection, and the strength permit, we must open a vein; or if not, we may cup, proportioning the evacuation of blood to the powers of the patient. Let draughts of the juice of ptisan, or of chondrus with honey, be

taken, or from bitter almonds with semilago, or chondrus having some sweet potion mixed with it, such as hydromel, apomel, or hydrorosatum. Fresh butter to the extent of three spoonfuls is also proper. The patient must also drink the propoma of the decoction of figs with hyssop, or of iris boiled in honied water, or of powdered iris, to the amount of two spoonfuls sprinkled upon honied water. This also evacuates downwards. To keep up the strength, he should be made to drink frequently of honied water alone, and with pine-nuts, and the seed of cucumbers. And cupping-instruments and the cerate of privet, having some iris sprinkled upon it; or the cerate of the oil of rue and dried iris; or that made of wax, and rosin, marrow, butter, hyssop, dried iris, and nard ointment, may be applied to the whole chest and sides.

COMMENTARY. The reader is referred to the authorities on pleurisy, as most of them treat of both diseases together. COMM.

Hippocrates recommends bleeding, purging, and attenuant drinks as his general plan of treatment. If the appendix to his treatise on the Regimen in Acute Diseases be genuine he approved of carrying venesection the length of inducing deliquium.

Aretæus gives a minute and faithful account of the disease, but his description is too long for our limits. He remarks that as the lungs have but small nerves, there is little pain unless the investing membrane be affected. He states that when the suppuration takes place, a metastasis of the matter to the bladder or belly sometimes occurs and relieves the patient, whereas, if it be determined to the lungs, it is apt to terminate in phthisis. He gives excellent directions for the application of his remedies, which are the same as those now in use, namely, copious bleeding (but so as to avoid deliquium), purging, attenuant and diluent drinks, rubefacients, containing mustard, to the chest, alkaline substances, such as soda, given in the decoction of hyssop; and when the fever has subsided he allows wine devoid of astringency.

Aëtius makes the same remark as Aretæus respecting the metastasis of the matter. His account of the disease is excellent, but like our author's.

Celsus properly states that the danger is greater than the

COMM. pain. His account of the treatment is too long for our limits, but is well deserving of attention.

According to Actuarius, in hot affections of the lungs the urine is first a bright yellow, but if the disease gain ground, and dyspnœa and thirst supervene, the urine becomes red and of a dark wine colour. (De Urinis, vii, 5.)

As the Arabians treat the disease like the Greeks, it is unnecessary to say much of their practice. Haly Abbas describes the disease as a hot inflammation of the lungs, for which he recommends bleeding, cooling and diluent draughts, containing linseed, fenugreek, barley, oil of almonds, liquorice, &c.

Rhases describes a species of pneumonia, requiring the use of tonics, analeptics, and wine. He relates the case of a patient who, he affirms, would infallibly have sunk under this disease, if he had not resisted the advice of the other medical attendants, who prescribed the anti-inflammatory treatment and laxatives.

Although our business be with facts and opinions, and not with words, we are confident we shall be excused in giving here a short verbal disquisition on one of the terms which occur in this Section, we mean ῥωγμὸς, translated by us *râle*. It occurs again at Book Sixth, Sect. XXXIII, in the description of *laryngotomy*, and in Aretæus's description of asthma (Morb. Chron. i, 11.) Cælius Aurelianus thus defines the term : "gutturis stridor quem Græci *rhogmon* vocant." (Morb. Acut. ii, 10.) In the Latin translations of the Arabians it is made *oregmon*. See Rhases (Div. i, 5.) About the terms used by Hippocrates in describing *râles* there is some difficulty, owing to the differences of the readings. Thus in the appendix to the work on Regimen in Acute Diseases we read ῥωγμὴ in some MSS., and ῥωχμὴ in others. See Littré (Hipp. t. ii, 464.) In other places he uses ῥέγξις. (Ibid. 262.) In Psellus we read ῥεγμός. (Op. Med. l. 230.) These, as far as we know, are the only terms used by the ancients for the noisy sounds of the respiration in the throat and chest. Ρόγχος, in Latin rhonchus, we believe, always signifies *snoring*.

SECT. XXXI.—ON SPITTING OF BLOOD.

When the spitting of blood arises from rupture, a great quantity will be evacuated, and sometimes from an obvious cause, such as a fall, straining of the voice, and the like; and sometimes from an obscure cause, such as plethora, or immoderate cold; for cold, as Hippocrates says, occasions rupture of the veins. If it proceed from erosion, the discharge of blood will not be rapid, but in small quantity, and will have been preceded by acrid and unwholesome food, or abstinence, or an acrid defluxion. When it arises from exhalation, none of the aforementioned circumstances, unless, perhaps, the plethora precedes; but a more moistening and heating diet, the use of immoderate baths, and living in very hot places, may appear to occasion it: and it will neither supervene upon inflammations, nor fevers, nor pains, as in the case of erosion; but, on the contrary, the patients will appear in all probability to be relieved by the evacuation. If the hemorrhoidal or the menstrual discharge in women be suppressed, the renewal of these will remove the danger; and the like good effects will result from discharges of blood by rupture, when the disease is connected with plethora, unless the ulcer, or the greatness of the loss of blood prove injurious. When the discharge of blood is from erosion, it is never productive of good. If it is brought up by vomiting, it is clear that it comes from the stomach or bowels, from which parts it is sometimes evacuated by the anus; but, if by coughing, it comes from the respiratory organs; but if it is frothy and whitish, and is brought up at intervals, without pain and oppression, it is clear that it is brought up from the lungs, upon which, in process of time, a continual fever will supervene, more especially if occasioned by erosion; and part of the substance of the lungs, bronchia, or veins, will be brought up. I knew a certain person affected with spitting of blood from the lungs, who, after a time, with much coughing, and full evacuation of blood, spit up four or five stones, rough as caltrops, and of the weight of three or four siliquæ; and he was immediately relieved, but soon after fell into a consumption and died. If the discharge consist of phlegm, with a slight cough or hawking, and

the expectoration be frothy and light, you may know that it comes from the trachea. But if it consist of black and grumous blood, and there is pain in the part, it indicates that the discharge is from the thorax, being transmitted by the lungs or bronchia. If it be brought up with hawking, it is by the palate from the parts about the pharynx. But if it flow from the head, it is evacuated with some tickling and cough, for it runs down into the windpipe, and is again brought up. Such discharges are commonly preceded by an acrid defluxion, headach, or heaviness. Sometimes the evacuation of blood is from the palate, owing to a leech having been swallowed, and fixing on some of the parts there. But of this case we will treat on the subject of Poisons.

The cure. Those who have a spitting of blood from catarrh are to be immediately bled (unless the defluxion be very acrid), and a quantity of blood taken away proportionate to the strength. Ligatures are to be applied around the extremities, and the whole body, excepting the head, is to be rubbed with hot old oil, or with Sicyonian. Farinaceous food, containing the juice of some austere fruit, such as that of pomegranate, of apples, or of pears, is to be taken; or let these be boiled with it. When going to sleep, give them the trochisk from amber; and on the third day give some boiled honey to lick. If these do not succeed, and the disease is protracted, shave the head, and use the application from wild-pigeon's dung; and after three hours remove this application, and put the patient into a bath, taking care not to anoint the head. Then, having given him spoon-meats for food, administer to him the theriac antidote at bed-time, and repeat this next day; and rub in like manner the whole body, except the head, but to it apply the cerate from thapsia, or the like, and again use the spoon-meats. When the complaint is protracted, apply a cupping-instrument to the back part of the head. But if the defluxion be of a very acrid nature, we must abstain from venesection, and have recourse to the food and remedies formerly described when treating of Catarrh, and such as are now to be mentioned. When the spitting of blood proceeds from cold, the chest should be warmed, along with remedies which are of a desiccative nature; and we must give the medicine from two peppers, with the trochisk of amber. Those who bring up blood from the respiratory organs, owing to rupture or anastomosis of the

vessels, are to be bled from a vein, unless the discharge of blood be great. In every case, the patient is to be laid in a well-ventilated place, upon a steady couch, in an erect position; and he ought to abstain from strong respiration and talking. To the affected parts we may apply sponges soaked in tepid oxycrate; but after the seventh day, unwashed wool, with the oil of roses, of myrtle, or of lentisk, sometimes with vinegar, and sometimes with austere wine; or, if the discharge be great, we may apply fine flour and manna, with vinegar, or alum and acacia, or pomegranate rind, or galls with vinegar, or dates with polenta and quinces boiled in austere wine. Afterwards we may put on the plaster from willows, more particularly if the discharge be moderate. But the following things are to be taken by the mouth: Purslain when eaten is of use (but its juice when drunk is more powerful), the flowers also of the wild pomegranate, the fruit of the bramble and its flowers, the fibrous part of the common oak, and the membrane under the shell of the acorn (but these are used more especially in decoction); and yet those of the fagus and ilex are more powerful remedies. The Samian aster applies to every spitting of blood, and also the Lemnian earth, and bloodstone finely triturated with the juice of pomegranate or knot-grass. The dose of the stone should be one scruple. The following compound remedies are useful; namely, the trochisk from amber, that from coral, and that from Egyptian thorn, also the powder composed of the earth called Samian aster, Lemnian earth, coral, confrey, and starch, of each, equal parts. When the disease is occasioned by erosion, more especially if a catarrh precede, we may mix half a part of opium. And the composition admitting of equal parts of Samian aster, agerat stone, and Lemnian earth, is an excellent remedy when drunk to the amount of two spoonfuls (cochlearia) in two cupfuls (cyathi) of plantain-juice.—*Another:* Of Lemnian sealed earth, dr. xvj; of Samian aster, dr. xviij; of starch, dr. viij; of sarcocolla, dr. iv; of gum, dr. ij. Of this in powder let one spoonful be taken with two cyathi of the decoction of dates. Let them also take cold oxycrate, or the decoction of dates, of apples, of pears, of vine tendrils, or the like. They may take food, if the strength urgently requires it, about the second or third hour, but if otherwise, about the fourth. Let it consist of bread that has been soaked in cold water, or halica, or chondrus, with some of

the refrigerant juices, such as those of pomegranate, or myrtles, or with honey and unripe grapes mixed together, or eggs softly boiled, or cakes prepared from milk with some astringent. Of pot-herbs they may take endive, succory, plantain, boiled with the oil of unripe olives and vinegar. Of autumnal fruits they may use apples, pears, medlars, pomegranates, and the fruit of the cornel-tree. When they have no fever, their drink may consist of a small quantity of diluted wine; but, when they have fever, of some of the afore-mentioned draughts, or Cibyratic hydromel. Those who vomit blood may be treated on the same plan, only they must abstain from taking food often. They are easily cured, because the remedies taken by the mouth are applied directly to the parts from which the blood flows. When blood is coagulated in the stomach, let the patient drink of rennet, more especially that of a hare, or the lixivial ashes of figs with water, or thyme, or savory with vinegar; or evacuations may be produced by means of milk divided into parts (*lac scissum*), or of aloes. Those who hawk blood from the palate must use astringent gargles, and apply to the forehead and the rest of the head the remedies for bleeding from the nose. Such is the treatment of spitting of blood, which must be carefully attended to, on account of the danger from an immoderate discharge of it; for if a great quantity be evacuated, it will bring instant death, as in the case of a slaughtered animal; but a continuance of the complaint threatens a conversion into phthisis. Wherefore, when everything is properly attended to, and the discharge of blood ceases, their strength must be recruited by getting fish and the feet and brains of young swine. We must also direct them to get their bodies rubbed, to abstain from the frequent use of baths, from drinking wine, and from mental emotions and venery.

COMM. COMMENTARY. See Hippocrates (de Morbis, et alibi); Galen (Meth. Med. v, and sec. loc. iv and vii); Aretæus (de Morb. Acut. ii, 2); Aëtius (viii, 65); Celsus (iv, 5); Alexander (vii, 1); Oribasius (Synops. ix, 2); Leo (iv, 30); Actuarius (Meth. Med. i, 17); Octavius Horatianus (ii, 2, 9); Nonnus (128); Scribonius Largus (83); Marcellus (de Med. 17); Serapion (ii, 25); Averrhoes (Collig. vi, 34); Mesue (de Ægr. Pect. 6); Avicenna (iii, 10, 3, 4); Avenzoar (i, 16, 5); Haly Abbas (Theor.

ix, 26; Pract. vi, 10); Alsaharavius (xii, 6); Rhases (ad Mansor. ix, 59; Contin. ix.) COMM.

The father of medicine has mentioned this disease casually, but has not given a full account of it. We may mention, however, that he refers one species to disease of the liver. (Coac. 450.) Aristotle states that vomiting of blood is not dangerous when connected with obstructed menstruation. (H. N. vii, 10.)

The description given by Aretæus is exceedingly accurate. Blood that is discharged by the mouth, he remarks, may come from the fauces, nose, and palate, in which cases it is seldom attended with danger; or from the lungs and arteria trachea, which is exceedingly dangerous, and may prove fatal either suddenly, or by terminating in consumption; or from the stomach, which is less dangerous, as the remedies can be applied direct to the part affected; or from the liver and spleen, which is a more dangerous case, as the remedies cannot be so readily applied to them. They all arise, he says, from rupture, erosion, or rarefaction. By rarefaction (ἀραιῶσις) he means the same as *exhalation* (ἀναστόμωσις). If the blood be black and thick, it comes from a vein; and if florid and thin, from an artery. Of these cases that in which it proceeds from rarefaction is said to be the least dangerous, as it may readily be cured by astringents. The circumstances and characters of all the other cases are stated with great accuracy and at some length. He concludes with the remark, that in hemoptysis the patient despairs from the first, whereas in consumption he flatters himself with the hopes of recovery to the last. With regard to the treatment he directs that the patient be laid on a firm couch (as all motion increases the complaint), in a cool place, and that he abstain from speaking and all mental emotions. In every case, if the patient's strength will permit, he recommends venesection at the elbow. Ligatures, not so tight as to occasion pain, are to be applied to the extremities. Over the place from which the blood flows he directs us to apply wool or sponges soaked in austere wine and rose-oil, or in vinegar. In certain cases he directs us to put an astringent plaster upon the chest. With regard to the medicines taken by the mouth, he recommends astringents, especially coral, when the disease is occasioned by dilatation. These, however, are only to be given when no fever is present. The diet is the same as that recommended by our author.

COMM. The account given by Celsus is very similar, and highly interesting. He approves of bleeding, the internal and external use of vinegar, and cold water to drink. Part of his treatment deserves to be given in his own inimitable language: "Præter hæc necessaria sunt quies, securitas, silentium. Caput cujus quoque cubantis sublime esse debet, rectèque tondetur. Facies sæpe aquâ frigidâ fovenda est. At inimica sunt vinum, balneum, venus, in cibo oleum, acria omnia, item calida fomenta, conclave calidum et inclusum, multa vestimenta corpori injecta, etiam frictiones. In hoc casu per hiemem, locis maritimis; per æstatem, mediterraneis opus est."

Scribonius Largus, among other remedies, mentions sponging the chest with vinegar.

Pliny the elder recommends the juice of henbane in hemoptysis. (H. N. xxvi, 15.) See also Marcel. Empir. (17); Plin. Valerian. (iv, 69.)

The account given by Aëtius is full and judicious, but mostly borrowed from Galen. He approves of the internal use of vinegar, and of applying to the chest wool soaked in the same.

Oribasius, Actuarius, and Nonnus recommend internal remedies like those of our author.

Alexander's observations are exceedingly judicious; but we can only afford room to state his opinion of external applications. He approves of embrocations by means of wool soaked in rose-oil, or the like, with some vinegar or austere wine not very old; but recommends us to change the application frequently, as by allowing it to remain it will only irritate and provoke the flow of blood. With such precautions Octavius Horatianus, in like manner, approves of sponging the chest with sour wine and water, or vinegar. Alexander properly forbids us to give anything warm, and cautions against violent exercise, anger, venery, and saltish food.

Galen expounds the pathology and principles of treatment so fully, that we cannot even venture to give an abridgment of his account, but will venture to recommend it to the serious attention of the medical reader. We must not omit, however, what he says respecting the use of cold and astringent applications to the chest: "I do not, like most physicians, approve of applying externally astringents, or things which are of a cooling nature without astringency, in cases of hemorrhage; for it appears to

me that they have sometimes a contrary effect from what they are intended to produce, as they occasion a determination inwardly, and congestion in the deep-seated veins. I have therefore known cases of persons affected with spitting of blood who were evidently hurt by the application of cold to the chest. Wherefore, in cases of hemorrhage, I do not approve of the indiscriminate use of cold applications." (Meth. Med. v, 6.) See also de Const. Artis Med. (16.) Galen mentions that blood may run down from the fauces into the windpipe, and thereby occasion groundless apprehensions of hemoptysis. COMM.

It deserves to be remarked that Dioscorides, Pliny, Galen, Alexander, and Paulus agree in recommending the hæmatite, or bloodstone for hemoptysis. It is a native oxyde of iron.

To the long and accurate account given by Cælius Aurelianus it is impossible to do justice in a short abstract. Passing over entirely his description of the symptoms, and explanation of the sources from which the blood is discharged, we shall merely dwell upon a few points of his practice. He insists with proper earnestness on the necessity of complete rest, coolness, and abstinence from everything of a stimulant nature; and recommends the practice already often mentioned of applying to the part affected sponges or compresses soaked in cold water, or in water and vinegar, or in some astringent decoction. He also approves of the application of ointments or plasters composed of galls, alum, the rind of the pomegranate, and the like. From among his many internal medicines we would point out the composition consisting of gum acacia, alum, and the decoction of poppies. When the discharge does not stop before the third day, he recommends venesection. But if pain, difficulty of breathing, or a dry cough should come on, he approves of bleeding at an earlier period of the disease. He then directs us to give emollient epithemes, electuaries containing frankincense and opium, and the like. When the pain is protracted, he recommends us to apply cupping-instruments or leeches to the part affected. Food of a middle quality, milk, and the like are to be given. From his strictures upon the practice of the others, it appears that some of the medical sects had condemned venesection, but it is satisfactory to know that most of the authorities were agreed about the propriety of it. The Methodist forbids it when there are no symptoms of inflammation present.

COMM. It seems there were disputes also about the propriety of ligatures to the extremities, but Cælius pronounces in favour of this practice. He informs us further that some questioned the propriety of giving vinegar, but he decidedly approves of it. When there is any inflammation, he disapproves entirely of astringents. He also condemns sudorifics and diuretics. He allows exercise only when the complaint has abated.

Marcellus condemns ligatures to the extremities, but approves of applying to the chest a sponge soaked in cold water or acrid vinegar.

We have not room for many extracts from the Arabians, who, however, supply little additional information, although they treat fully of the disease. We would refer to Avicenna's account as being particularly full and excellent. He approves of the internal use of vinegar, and when there is a tickling cough, of anodynes, such as mandragora, henbane, and poppy. Rhases and Serapion approve of sponging the chest with vinegar. Averrhoes, who is fond of contradicting preceding authorities, condemns the practice of giving vinegar in hemoptysis. Mesue recommends the use of chalybeate water for drink. He approves in general of astringents. Haly Abbas gives a very full and interesting account of the causes and varieties of the disease, and modifies his treatment accordingly. He recommends bleeding from the basilic vein, to be repeated if circumstances require, purging with gentle laxatives, such as myrobalans and rhubarb, giving demulcents, such as gum arabic and starch, to which poppy is sometimes to be added, for allaying irritation. He directs the bath, strong exercise, and vociferation to be avoided. When the disease arises from a cold cause (he means in cases of passive hemorrhage), he forbids venesection, and recommends stimulants, such as frankincense and myrrh. In certain cases he allows astringents, such as alum, balaustine, galls, sumach, &c. He also directs us to apply to the breast an astringent cerate containing roses, plantain, purslain, &c. Alsaharavius recommends bleeding, cold applications to the chest, opiates, and astringents, according to circumstances. Rhases states that opium, by thickening or congealing the blood, proves useful in hemoptysis. He approves very much of a milk-diet. In general he recommends venesection. He directs the physician to be at pains to ascertain from what part the blood proceeds.

Cold applications to the chest are not now generally resorted to in this disease, although it will be seen that the ancient authorities generally approve of this practice. It will be remarked, however, that Galen condemns the indiscriminate use of this remedy; and Rhases also states that he had seen mischief produced by the unseasonable application of cold to the chest. In short, like every other mode of practice, it ought, no doubt, to be applied with proper caution and discrimination. COMM.

SECT. XXXII.—ON EMPYEMA AND PHTHISIS.

Empyema is formed either in the cavities of the chest, or in the pleura, sometimes arising from vomiting of blood, when the ulcer has not healed (in which case phthisis soon comes on, provided the discharge came from the lungs), and sometimes from a precursory inflammation, which has formed into an abscess and burst (as is sometimes the case in pleurisy), or from a defluxion from the head. The symptoms of a confirmed empyema are weight in the chest, an intense dry cough, with pain, and sometimes with a fluid, in which case they seem to experience an alleviation. At the commencement the attacks of fever are weak, irregular, and difficult to perceive; but when the abscess is about to burst, they have more violent fever, attended with rigor, and in speaking their breathing is obstructed. When the abscess bursts, matter is brought up, sometimes pure and sometimes feculent: sometimes it is discharged upwards, when it is attended with more danger; and sometimes downwards, in which case the matter is partly translated to the stomach and bowels; and partly to the bladder, the metastasis taking place by certain vessels. All along they have hectic fever until the ulcer becomes clean; and if this do not speedily take place, the empyema is converted into phthisis from the lungs undergoing ulceration. When this takes place, the cheeks are livid; there are copious sweats about the forehead and neck; the flesh is melted, the nails bent, and they appear glossy, white, or pale. When the disease gains ground, the bowels become loose, the hypochondria are retracted; for the most part thirst and a loathing of food oppress them; and the expectoration is very fetid.

The cure. Our first object, therefore, ought to be to assist

the concoction of the abscess, which may be attempted by fomenting with sponges, and applying cataplasms made of barley-flour, with dried figs boiled, some rosin, pigeon's dung, nitre, and mallows. The rupture of the abscess is promoted by lying upon the side which is not affected. Let them drink at intervals honied water, and the juice of ptisan with honey. Those who are stronger may likewise drink the decoction of hyssop and thyme with honey. Eating pickles also forwards the breaking of the abscess, and likewise the pills from the colocynth hiera, taken at bedtime. When the pus begins to be discharged, give again the decoction of hyssop, iris, and liquorice boiled in honied water, or liquorice triturated with sesame; and apply a cataplasm of fine flour, boiled in honied water and oil. When the ulceration is difficult to cleanse, we must use the compound remedies, such as that from horehound, either the simple or the compound one; that from tares; and those called dodecatheon, and the medicine named from Philoxenus. When it is converted into phthisis, we may give the headed leek, dissolved in draughts of chondrus or ptisan, and let them be twice boiled, and given by themselves. Let the water which is drunk be rain, and honied water made from it. At the beginning of the remissions apply cataplasms of linseed and fine flour, with the decoction of fenugreek, or mallows, oil, honey, and the leaves of marshmallows. In process of time we may have recourse to cerates, such as those from butter, oil of privet, oil of bays, and iris. The plaster of Mnasæus is also to be used. When there is a defluxion upon the chest, that made of willows may be applied to it. They may also take the simple propoma, mentioned already for empyema, and some of the compound ones. When a violent cough prevails, mix thyme and hyssop along with the juice of liquorice, in well boiled honey; and, having formed them properly, give to be retained under the tongue. The antidote of Mithridates, at intervals, will likewise suit with them, as also that from vipers. But the best remedy is the Armenian bole taken in a draught, and the antidote *esdra* is not at all inferior to those aforesaid.

COMM. COMMENTARY. See Hippocrates (de Morbis, ii, 45; Coacæ Prænot. et alibi); Galen (Meth. Med. v); Aretæus (Morb. Chron. i, 8); Aëtius (viii, 75); Oribasius (Synops. ix); Alexander (vii, 2, 3, 4); Leo (iv, 10); Actuarius (Meth. Med. iv, 4,

and i, 17); Nonnus (123); Cælius Aurelianus (Morb. Tard. ii, 14, and v, 8); Celsus (iii, 22); Octavius Horatianus (ii, 8); Marcellus (17); Avicenna (iii, 10, 5); Mesue (de Ægrit. Pect. ii, 12); Serapion (ii, 27); Alsaharavius (Pract. xiii, 3); Haly Abbas (Pract. vi, 12, Theor. ix, 20); Avenzoar (i, 16, 4); Rhases (ad Mansor. ix, 69; Contin. x.) COMM.

Hippocrates states, as tests of the nature of the sputa, that, if they possess a fetid smell, or sink to the bottom of salt water, they indicate great danger. When a collection of pus is suspected, he directs us to shake the patient, when a peculiar sound will be heard if there be fluid in the chest. And here, by the way, we may mention that Laennec gives Hippocrates great credit for his diagnostic talent in this case. It is in pneumothorax that succussion is applicable as a test of fluid being confined in the chest. In that case, he directs us to make an incision into the chest; in other words, he recommends paracentesis thoracis, an operation revived of late years, but with very equivocal results. Hippocrates, however, restricted the operation to those cases in which there is protrusion of the collected fluid. (Aff. Int. xxv.) It would appear, from one of his Aphorisms, that the pus was let out either by a cutting instrument or the cautery. (vii, 43.) In his Prognostics, he pronounces a falling out of the hairs and a diarrhœa to be fatal symptoms in phthisis. He gives a very striking description of confirmed empyema. (Prognost. 17.) His account of the formation of hydrothorax (Affect. Int. xxv) has also been highly commended by the great master of auscultation. According to Hippocrates, phthisis is most common between the ages of eighteen and thirty-six. (Aphor. v, 9.)

Aretæus gives a good description of the phenomena attending empyema thoracis. He says that when the abscess points outwardly, it separates the ribs from one another to make room for itself. It is occasioned, he says, by inflammation with a collection of blood. But the most graphic delineation of the phenomena of disease to be found in the whole records of medicine is that which he draws of a patient in the last stage of consumption. We will not mar it by attempting a copy which would fall so short of the original. He does not approve of the common tests, as recommended by Hippocrates; and, instead of forming an opinion of the case by throwing the sputa upon fire

COMM. or water, he prudently directs us to judge of the case from the general symptoms. Unfortunately only a fragment of the chapter on the treatment has come down to us. It appears from it that he approved of a milk-diet and a sea-voyage. In cases of empyema he states that the matter sometimes forms a communication with the windpipe, and is evacuated in that way, and sometimes it is carried off by the urinary passages.

Celsus recommends in particular a sea-voyage, change of air, gestation in a couch, and a milk-diet. He cautions against the bath and exposure to the sun or cold. When other means do not effect a cure, he directs us to burn the chest in different places with the actual cautery, so as to form issues. See a strong recommendation of this practice in Caillot (Elemens de Physiologie, p. 6.)

Galen has detailed the principles upon which phthisis ought to be treated in the fifth book of the 'Meth. Med.' He commends strongly a diet of milk, especially that of goats, which is, he says, of an intermediate consistence between the milk of cows and of asses. The ancients, he says, made consumptive patients suck a woman. Whatever kind be used, he recommends it to be drunk as soon as it is milked from the animal; and he further directs sometimes honey or a little salt to be added to it. According to Galen, portions of the lungs are sometimes brought up in the sputa. (Loc. Affec. iv.) Cælius Aurelianus also confirms this statement. (Tard. Pass. ii, 14.) Aretæus, Alexander, and Leo further say that portions of the bronchia have been brought up with the expectoration.

Alexander gives very judicious directions for the choice of milk, and treats of empyema otherwise very fully. He says, when pus is collected in the chest, the sound of it may be heard in succussions of the body.

Aëtius states, upon the authority of Archigenes, that in certain cases empyema is formed without fever. This is now well ascertained to be the case. He approves of the cautery, like Celsus. His account of phthisis is taken from Galen.

Cælius gives many important observations on the proper treatment of consumption, and strictures on the practice of the other sects. He remarks that in old coughs attended with fever, although the expectoration be at first transparent and not purulent, the complaint often terminates in phthisis. His descrip-

tion of the disease is singularly accurate. The pectoral *rale* he notices in these words: "Quosdam etiam sibilatio vel stridor thoracis sequitur." The pulse is said to be "debilis, densus ac deinde formicalis." He mentions that it usually terminates by a colliquative diarrhœa. His treatment is judiciously suited to the circumstances of the case. He condemns the early use of the bath, hellebore, and the formation of issues on the part affected. Of the varieties of empyema he has treated elsewhere at great length. He appears to consider the operation of paracentesis as dangerous. COMM.

Many of the remedies recommended by Marcellus contain a combination of stimulant with narcotic substances, that is to say, of myrrh, storax, and the like, with opium and hyoscyamus.

Pliny speaks of navigation, that is to say, a sea-voyage, as a popular remedy for phthisis in his time. (H. N. xxxi, 33.)

Vegetius, the veterinary surgeon, remarks that *tubercles like boils* form in the lungs of cattle. (Mulom. ii, 45.)

Avicenna's treatment is in general like that of Galen and his followers. He speaks of inhaling the vapours of arsenic, pine-fruit, &c. He and his countryman Avenzoar approve of paracentesis and the cautery. Mesue recommends the tepid bath in the decline of phthisis. Serapion approves of opening the abscess in cases of empyema by means of a red-hot iron. In the treatment of empyema Haly Abbas appears to have put great confidence in absorbent earths, such as burnt crabs, gum Arabic, Cyprian earth, &c. He gives the milk of asses in the morning, and at night the syrup of poppies. He also praises goats' milk. He approves of a milk-diet and demulcents likewise in phthisis. He makes frequent mention of poppies, doubtless with the view of alleviating the cough. In certain cases he prescribes the tepid bath; and, under proper regulations, we are convinced that it might often be of service. Haly approves of the tests of purulent expectoration, which we have stated above that Aretæus condemned. Alsaharavius says that the bath may prove useful in phthisis, but that it ought not to be tried except under the direction of a skilful physician. He seems to direct the patient first to use the tepid bath in a warm place, and afterwards to go for a short time into a cold bath. He does not explain the principles of his practice. He approves in general of a milk-diet, but directs us to change it if a diarrhœa

COMM. come on. The milk of asses or of goats is what he prefers. He approves of the Hippocratic tests of pus. Rhases describes several species of consumption. One of them he represents as being seated in the trachea. His account of the various modes of treatment is most ample. He strongly commends the milk of asses.

Galen, Rhases, and most of the ancient authorities held that consumption is contagious. See, further, Aristotle (Prob. 7), and Isocrates (Æginet.) Alexander Aphrodisiensis accounts for the propagation of the disease by supposing that putrid matter is conveyed from the lungs of the affected person to others. (Prob. ii, 42.)

The historian Sallust uses the word *tabes* as synonymous with *contagium*, in the following sentence: "Tanta vis morbi, uti tabes, plerosque civium animos invaserat." (Catalin. 36.) Livy does the same in several places. (See ii, 23.)

SECT. XXXIII.—ON PLEURISY.

Pleurisy, properly so called, is an inflammation of the membrane which lines the ribs, and is attended with difficulty of breathing, cough, continual fever, and pain shooting to the clavicle and hypochondrium. You may distinguish pleurisy from inflammation of the liver (for in it there are all these symptoms), by the pain in pleurisy being pungent, and the cough being sometimes without expectoration (when it indicates that the disease is not yet concocted), and sometimes with expectoration, the appearance of which indicates the nature of the humour that occasions the complaint; for it is red and tinged with blood when a fulness of blood is the cause; yellow and palish when caused by yellow bile; white and frothy when from phlegm; and blackish when from the melancholic humour. And the pulse is hard and serrated. But, in inflammation of the liver, the pain is not pungent, nor is the pulse so hard; and the cough throughout is dry and without expectoration, and the face appears paler. Pleurisies from inflammation of the external muscles (which are not, properly speaking, pleurisies) are not accompanied with cough and expectoration, nor is the pulse hard; and if one touch the part affected with his hand, the patients feel pain; and if not resolved,

the swelling is converted into pus, which may be evacuated externally by an incision; whereas pleurisy from inflammation of the membrane which lines the chest has not this termination; for if it do not discharge the empyema either internally or externally, it terminates in peripneumonia.

The cure. If the pain shoot to the clavicle, we must straightway open a vein; or if to the hypochondrium, we must purge downwards. Physicians of late, in all cases, have recourse to venesection, apprehending, I suppose, the disturbance occasioned by purging. When the strength prevents us from having recourse to either of these remedies, we must use stimulant clysters; and if the pain is moderate, after the clyster we may give honied water, and the juice of ptisan and of chondrus. When the affection is on the decline, we may add to the juices leeks or calamint, and the patient may get the seeds of pennyroyal and nettle, with honey, as a linctus. When the pains are violent after the evacuation, they must be soothed by the application of hot wool, or of sulphurated wool; or by fomentations of millet and flour in a bag, or by means of hot water or oil in a bladder. Unwashed wool may be applied with oil; and wine, containing an admixture of sea-water, or salt, may be added to it. Or we may apply a cataplasm, formed of the medicine from seeds, with the decoction of chamomile and marshmallows, or of dried figs, iris, wormwood, and some honey, with oil of nard. About the fourth day give spoon-meats for food, with some honey; but after the seventh day we are to give a linctus of almonds and nettle-seeds, triturated in honey, or the linctus of butter and honey pounded together. And we are to use the hypoglottis (electuary) of boiled honey. And we must apply to the affected parts the fetid epitheme—that from sweet marjoram, and the rue-plaster. The bulbi, applied with axunge, are often an effectual remedy, and they may also be administered in a clyster with butter and turpentine. Among the most powerful remedies is the linctus from pine-nuts and bitter almonds, linseed, pitch-fruit, and starch, in equal parts, with honey. When they are troubled with insomnolency, it will be proper to give a linctus of poppy-heads; and we may use the antidote called athanasia, and those prepared for this purpose. When the disease remains after the fourteenth day, we must cup them, and keep them upon a spare diet; and then, when the disease

is on the decline, we may make them take the bath (but avoiding the cold), and allow them to use a more nutritious diet. If the inflammation of the pleura be not resolved, but appear to be converted into pus, we must have recourse to the remedies formerly mentioned.

For pains of the sides without fever. Pains of the sides without fever are cured by bdellium and costus, mixed with the ashes of burnt cabbage-leaves and tallow: for this remedy is powerfully discutient.

COMM. COMMENTARY. See Hippocrates (de Morbis, ii; de Rat. Vict. in Acut.); Galen (de Med. sec. loc. vii, et alibi); Celsus (iv, 6); Aretæus (Morb. Acut. i, 10; Curat. Morb. Acut. i, 10); Aëtius (viii, 76); Psellus (Op. Medicum); Alexander (vi, 1); Oribasius (Synops. ix, 7, 8); Actuarius (Meth. Med. iv, 4); Nonnus (129); Cælius Aurelianus (Morb. Acut. ii, 13); Octavius Horatianus (ii, 4); Marcellus (de Medicam. 24); Serapion (ii, 21); Mesue (de Ægrit. Pect. 7); Avicenna (iii, 10, 4); Alsaharavius (Pract. xii, 8); Avenzoar (i, 16, 4); Haly Abbas (Theor. ix, 21); Pract. vi, 13); Rhases (Divis. 54; Contin. x.)

Hippocrates gives brief descriptions of pleurisy, and recommends nearly the same treatment that is now practised, namely, bleeding ad deliquium animi, purging, diluent drinks, and fomentations to the side by means of sponges squeezed out of hot water, or of bags filled with salts and millet, or the like. He says, those who have neither been bled nor purged die on the seventh day, either with delirium, or with orthopnœa and a *râle*. One of his aphorisms is, that pneumonia supervening upon pleurisy is dangerous. (vii, 11.) He was acquainted with pulmonary adhesions, as is remarked by his devoted admirer Laennec.

Aretæus, with his usual accuracy, gives a most complete description of all the symptoms of pleurisy, but, as it is not much different from our author's, we shall not enter far upon a detail of it. He states distinctly that the disease is an inflammation of the membrane which lines the chest. The sputa are pituitous, bilious, or deeply saturated with blood, or yellowish. He remarks, by the way, that pleurisy is sometimes a sporadic disease, and sometimes epidemical. His directions about the application of the common remedies are dictated by his usual excellent judg-

ment. On the necessity of early and repeated venesection he insists strongly, but recommends it not to be carried the length of producing deliquium animi, as the fluids will thereby be determined inwardly. Archigenes (ap. Aëtium) and other ancient authorities joined him in this rule of practice, although in opposition to Hippocrates. He approves of cupping the side, but not until after the seventh day, and directs us to apply to the scarifications salts or nitre. His internal remedies consist of demulcents, diluents, and narcotics, varied according to circumstances. He forbids the use of cold drink and cold air. Celsus also cautions against cold, and directs sinapisms to the chest. His general treatment is nothing different from that of Hippocrates. COMM.

Galen treats of pleurisy cursorily in many parts of his works, but, as he follows entirely the views of Hippocrates, we need not enter into a detail of his practice. We may mention, however, that the worst character of the pulse, according to him, is when it is hard, small, and very frequent. (Diff. Puls. iv, 5.)

Aëtius gives an interesting account of a species of pleurisy arising from indigestion or crudities of the stomach. In this case he forbids venesection, and recommends clysters and calefacient applications.

Alexander gives very minute directions how to distinguish pleurisy from hepatitis. He remarks that, in the latter disease, the patient is yellowish: in the former the pulse is hard and serrated. When the pain is not violent, he recommends us to trust to cupping, which he says was a popular remedy in Armenia. He disapproves in general of opiates. When the discharges from the bowels are bilious, he directs purging with scammony, black hellebore, and the like. According to Actuarius, the urine in pleurisy is first reddish, and afterwards becomes red and of a dark wine colour. (De Urinis, vii, 9.) The sputa, he says, in pleurisy and pneumonia, is of a whitish and bloody colour. (De Diagnos. i, 16.)

Psellus cautions us not to confound pleurisy with abscess of the side. In the latter case, he remarks, there is no cough, and pain is felt upon pressure. He appears to copy from Paulus.

There is nothing particularly original in the accounts given of it by Oribasius, Nonnus, Octavius, and Marcellus. We shall, therefore, proceed to explain the views of the Methodists. The remedies recommended by Cælius Aurelianus are, upon the whole,

COMM. nearly the same as those directed by the other sects, but he attaches much importance to his own method of applying them. In illustration of his principles, we shall mention a few of his strictures upon the practice of the others. He condemns Hippocrates for carrying venesection the length of producing deliquium animi, which he pronounces to be a very pernicious practice. Indiscriminate purging, he thinks, increases irritation. He disapproves of abstinence for seven days, as enjoined by the father of medicine. Diocles he blames for enjoining the same rules with regard to bleeding and purging, and for allowing cold food in summer. Praxagoras he strongly and properly condemns for giving pepper or southern-wood in mulse; and also for recommending the warm bath, and fomentations to the side, which he justly remarks will only occasion cold to the patient; and for prohibiting venesection, when the disease is occasioned by cold, and the patient is old and weak. He finds fault with Asclepiades for saying that venesection is not proper in certain countries, as at Rome and Athens, whereas Cælius properly maintains that venesection is everywhere proper. It is worthy of remark, by the way, that prejudices against bleeding prevailed in Rome when Galen wrote, and to a certain extent do so still. Cælius also justly condemns his too free allowance of mulse, or wine and honey. He blames Themison for using acrid applications to the chest. Of his strictures on the treatment of Heraclides, the most just are his condemnation of the practice of giving mulse with rue, and garlic with vinegar, to remove the nausea; and of his direction to bleed only on the second day after two or three clysters had been given.

Of the practice of the Arabians little need be said, as their views of treatment are entirely conformable to those of the Greeks. Avicenna's directions are most minute, and would furnish an excellent guide to practice. He forbids cold things, and approves of cupping and sinapisms only when the disease does not yield to the ordinary treatment. When insomnolency continues long, he permits to give the syrup of poppies. Convalescents are directed to avoid saltish and sharp things, repletion, the sun, wind, smoke, loud talking, and the like. Serapion, on the fourth day, adds liquorice to the decoction of barley. Mesue and Avicenna agree in opinion, that fomentations to the side do no good unless in slight cases, and when applied early. Mesue

forbids cupping until the seventh day; and, when the stomach and bowels are loaded, he opens the bowels before bleeding. Haly Abbas directs bleeding from the arm opposite the side affected, at first; but, if the disease is protracted, from the arm of the same side. He recommends gentle laxatives, and, after bleeding and purging, warm applications to the side, such as a bladder half filled with hot water. He also speaks of cupping, and of stimulant plasters, sinapisms, and such like. He says, when the body is cleansed, and the disease matured, the patient is to be put into a tepid bath. This practice may deserve consideration. COMM.

It is worthy of remark that the Arabians in general bleed from the arm of the opposite side. The Greek and Latin authorities are divided in opinion upon this rule of practice. Hippocrates, Galen, and Celsus recommend us to bleed from the arm of the affected side; but Aretæus, Aëtius, and Cælius Aurelianus, from the opposite. Galen, in one place, mentions that he had abstracted blood in a case of pleurisy by opening one of the arteries of the hand.

SECT. XXXIV.—ON AFFECTIONS OF THE HEART.

When the heart itself is primarily affected, the case is far beyond all medical aid, occasioning sudden death; and so also in the inflammations and erysipelas of it, strong distemperatures in very acute fevers, and hemorrhages when it is wounded, especially in the left ventricle. When it is affected sympathetically with the brain, the liver, the orifice of the stomach, and from sorrow, fear, and many other causes, it brings on the affection called syncope, being a sudden collapse of the vital powers, indicated by prostration of strength, deliquium animi, a small pulse, coldness of the extremities, and copious perspiration. When this affection is of a violent nature, it also is irremediable; but if the strength stands out, it may sometimes be relieved. But strong palpitations of the heart often arise from a fulness or effervescence of its blood. When, therefore, the heart is over-heated, it renders the respiration large and dense; but when it is too cold, the respiration is small and rare. The complete cure of syncope of the heart, when it occurs among the

symptoms of fever, we have treated of in the Second Book. This only may now be added, that when the collapse gains ground after friction and ointments have been applied to the extremities, and after purification of the floor, and other cooling means, we must sprinkle upon the parts of the body which are sweating powdered myrtle, Cimolian earth, or amber, or pomegranate-rind with manna, or Samian earth with gum; and cataplasms of mustard or pellitory, or adarce, are to be applied to the cold extremities, as far as to the groins and armpits. The food should be bread out of water, or out of cold diluted wine, swines' feet and the joints and snout, and fowls; all the things being given in a cold state. On the head and forehead is to be rubbed the juice of unripe olives, or some astringent application, with gum, and the decoction of roses; and a cataplasm is to be applied to the hypochondria and stomach, formed from dates, roses, the flower of the wild vine, acacia, hypocistis, and alum.

On palpitation of the heart. "I knew a certain person," says Galen, "who suffered an attack of palpitation of the heart every year in the season of spring. Wherefore, having for three years experienced benefit from venesection, in the fourth he anticipated the attack by getting bled, and escaped from it, and did so for many years afterwards, using at the same time a suitable diet. And yet even he died before attaining old age, as every other person in this complaint does, some being suddenly cut off in acute fevers by syncope; but some of them without syncope, being unexpectedly deprived of life, as if by apoplexy. The majority of those who are thus affected do not reach the fiftieth year of age, but pass the fortieth."

COMM. COMMENTARY. See Galen (de Loc. Affect.); Aëtius (viii, 58); Oribasius (Synops. ix, 6); Actuarius (Meth. Med. iv, 3); Leo (iv, 21); Nonnus (134); Avicenna (iii, 11, 12); Serapion (ii, 27); Avenzoar, 1, 12); Mesue (de Ægrit. Pect.); Haly Abbas (Theor. ix, 22, and Pract. vi, 16); Alsaharavius (Pract. xiii); Rhases (Divis. i, 58, and Contin. xvi.)

Most of the knowledge which the ancients possessed of these obscure complaints may be found in Galen (l. c.) In the body of a monkey he had remarked hydrops pericardii, and in that of a cock he had detected a scirrhous tumour, from which he inferred that these diseases occur also in the human subject. One would

almost suspect, however, that the ancients were more familiar with *inspectiones cadaverum* than they chose to avow. As a proof of this, we may mention what is related by Hesychius of Hermogenes the rhetorician: "Hermogenes the rhetorician having died was dissected, and his heart was found covered with hair, and greatly exceeding its natural size." (See also Suidas.) Respecting persons having hair on their hearts we quote the following note from Fabricius (Bibliotheca Græca, iv, 429): "Plura exempla hominum quorum cor pilosum est repertum collegit elegantissimus. Muretus (xii, 10, Var. Lect.); Pontanus (Bellar. Attic. 301), et Alexander Tassonus in libro Italicè edito cui titulus (Pensieri Diversi, (vi, 30.) De Aristomene Messenio idem tradit præter alios Dio. Chrysost. (xxxv, 430) de Leonida Plutarchus in parallelis minoribus (306.)" It is proper to mention, however, that Senac is incredulous as to the truth of these stories (Essai, &c. 62.) On the subject we are treating of the learned Stephen Bernard has the following remark: "Apparet, ni fallor, ex hoc loco Pauli (iii, 68), veteres morborum sedes in cadaveribus rimari non neglexisse quod etiam patet ex illis quæ de hepatis inflammatione habet (181), qui enim scire poterant aliquando partem ejus cavam, nonnunquam vero gibbam inflammatione tentari nisi ex cadaverum inspectione?" (Ad Nonni Epit. 208.) See also Pliny (Hist. Nat. xi, 70), and the note of Harduin. COMM.

Since all the writers subsequent to Galen merely copy from him, we need not say more of their opinions. We may state, however, what Actuarius says regarding the characters of the urine in affections of the heart. In hot intemperaments of the organ the urine at first is more acrid and thinner, but as the disorder increases, it assumes an oily colour and consistence. The sediments become grumous, furfuraceous, scaly, and gritty. When it is affected with a cold intemperament, the colour of the urine is whiter, and the sediment at first moderate and crude, but afterwards it becomes black. (De Urin. vii, 4.)

The Arabians, especially Avicenna, treat of these complaints at great length, but without supplying much additional information. Avenzoar speaks obscurely of certain tumours resembling pellicles or cartilages on the pericardium. He mentions also hydrops pericardii, and abscess of the same. Pain of the heart, says Haly Abbas, may arise from an intemperament, organic disease, or a

COMM. solution of continuity. The last two causes soon occasion death. He mentions that palpitation may be occasioned by dropsy of the pericardium. He recommends bleeding in cases of palpitation, upon the authority of Galen, and also things of a cold nature, such as seeds of cucumbers, citrons, gourds, roses, and camphor. Alsaharavius gives a similar account of these affections. Rhases also approves of venesection and cold applications. He mentions that palpitation is sometimes felt in the region of the stomach, for which he recommends bitters, such as wormwood.

The disease which Galen and his followers describe under the name of palpitation was no doubt that state of the heart now called hypertrophy with dilatation. In confirmation of the truth of Galen's prognosis, we may quote the words of the celebrated translator of Laennec, as to the issue of the disease of the heart we have mentioned: "Such persons however are marked for destruction. After a certain time the disease obtains the mastery, and brings the strong man down, the sooner, alas! for the bold resistance made to his dominion." (English Translation of Laennec, p. 62.)

SECT. XXXV.—ON AFFECTIONS OF THE BREASTS.

After childbirth, the milk frequently being converted into cheese in the breasts, produces inflammations. Wherefore at first we may use these applications: Having squeezed a soft sponge out of tepid oxycrate, apply it to the breasts, and bind it on in the proper form; or use dates triturated in oxycrate with bread, or a whole egg with rose-oil and some cerate; or alum, fleawort, with coriander and purslain, may be applied in the form of a cataplasm; or apply the firestone triturated with cerate, and bind it on. When there is distension or thrombus in the part, apply a cataplasm of bread with water and honey, or with wine and honey; or bread with the green herb perdicias (*pellitory of the wall?*), along with cerate twice a-day; or bean-flour with hydromel, or sodden must. But if they cannot bear the weight we must use an embrocation of hot sweet oil by means of soft wool. But we must foment them with the steam of hot water, or a decoction of fenugreek, or of marshmallows, or of linseed. And we are to apply to them a cataplasm made

of fine flour with linseed, or fenugreek with hydromel, or sesame with honey, or pounded butter. But we must interdict sucking of the breasts, because it only attracts more milk to them. When the inflammation is on the decline we may apply the following cerates: Boil beet in oil until it is softened, throw it away, but add to the oil a moderate quantity of wax, and use. —*Another:* Mix the red parts of ten raw eggs in a cerate consisting of wax, oz. iiss, and of rose-oil, oz. iv; stir with a spatula, and add as much salt water as it can receive, and then again stir with a spatula, and use. For hardness of the breasts, the composition from honey is applicable, and all emollient applications. When the swelling is converted into pus, we must use those applications which have been mentioned for parotis, and those that will be mentioned afterwards for apostemes.

From Archigenes, for spreading ulcers of the breasts attended with malignity. Of good Adriatic wine, xx sextarii; of the sumach, lb. j; of cypress balls, lb. j; of black galls, called *omphacitæ*, oz. vj; of cassia, oz. vj; when bruised, macerate in wine for ten days, then boil down to one half, stirring with a cypress spatula; then throw away the herbs; and when the juice is boiled to the consistence of honey, lay it up in a glass vessel. Use it for spreading ulcers, undiluted, or, if it is too thick, let it be diluted with wine. It is so made as to apply to spreading ulcers in the breasts, to runnings of the ears, foul defluxions from the gums, and dysentery. When diluted with milk it acts as a paregoric in soothing pain. Other kinds of ulceration of the breasts must be treated like ulcers in general.

Preservatives of the breasts. Having pounded cumin with water, apply to the nipples, then lay upon the breasts a sponge squeezed out of oxymel, and bind it with a bandage. After three days, having taken away the cumin, put on a cataplasm of the bulbous roots of the lily upon the nipples, and having bandaged it let it remain again for three days, and do the same three times a month.—*Another:* Apply powdered hemlock for nine days, and the sponge externally, as mentioned above; and after an interval of a few days repeat the same. The rubbings from the Naxian whetstone act as a preservative of the breasts of virgins.

COMM. COMMENTARY. See Oribasius (Synops. ix, 9); Aëtius (xvi, 35); Nonnus (151); Scribonius Largus (102); Avicenna (iii, 12); Haly Abbas (Theor. ix, 40; Pract. viii, 29); Alsaharavius (Pract. xiv); and Rhases (Contin. xv.)

A considerable part of this Section is copied from Oribasius. Aëtius, however, has treated of these complaints more fully than any other author. He gives from Philumenus various prescriptions for inflamed breasts, the most important ingredients in which seem to be ceruse and litharge, with wax or honey. One of them also contains the recent leaves of henbane, evidently for the purpose of allaying pain. For indurated mammæ he directs linseed, or the seed of fenugreek with hydromel to be applied. In short, his applications and our author's are very similar. He describes a certain induration of the mamma under the name of *chondriasis*. This affection is alluded to by Aristotle (H. A. vi, 20.) When an abscess forms, he recommends us to open it and evacuate the pus. Nonnus, as usual, copies from our author.

Avicenna treats fully of these complaints, but his remedies are mostly borrowed from the Greeks. The most simple of his applications for apostemes of the breasts is a sponge squeezed out of tepid vinegar and water. Haly Abbas recommends the same, or a plaster of the oil of roses, bread, and the yelk of of an egg. When suppuration is expected, he directs us to apply a cataplasm of figs. Alsaharavius treats minutely of this subject. When pain of the breast arises from coagulated milk, he recommends a piece of cloth soaked in warm water or vinegar. When milk cannot be extracted from the breasts, he directs them to be sucked by means of a suitable instrument shaped like a nipple. To dispel coagulated milk Rhases recommends a mixture of hot vinegar and rose-oil. He also recommends a composition of mint and common salt.

SECT. XXXVI.—FOR FETID SMELL AND SWEATING AT THE ARMPITS.

Of liquid alum, p. ij; of myrrh, p. j; dissolve in wine, and use.—*Another*: Plunge heated Molybdæna into fragrant wine, triturate with the wine, adding a little myrrh until it become of the thickness of the sordes in baths, then use. *Another:*

Of litharge, dr. xvj ; of myrrh, dr. ij; of amomum, dr. j ; mix with wine.—*Another* : Of liquid alum, dr. viij ; of amomum, of myrrh, and of spikenard, of each, dr. iv; triturate with wine, and use.

COMMENTARY. See in particular Oribasius (Synops. viii, 36) ; Nonnus (155) ; Geopon. (xii, 26) ; Alsaharavius (Pract. xv) ; Rhases (ad Mansor. v, 51, and Contin. xxxvi.) COMM.

All the authorities concur in recommending for the cure of this complaint, a combination of astringents with aromatics. They therefore direct us to mix alum with storax, myrrh, and the like. Rhases recommends tutty with rose-water and camphor, and also various astringent and odoriferous liniments. The plan of treatment directed by Alsaharavius is deserving of attention. He recommends purging with the hiera picra. Alsaharavius further recommends a bath in which mint, marjoram, centaury, spikenard, and the like have been boiled. The part is afterwards to be rubbed with an ointment, consisting of litharge or tutty, mixed with alum, myrrh, &c. in fragrant wine.

The ancients believed that living freely upon figs rendered the perspiration fetid. Eustathius, the commentator on Homer, makes mention of two Sophists, called Anchimolus and Mochus, who lived solely upon figs for food, and water for drink ; and he adds that their perspiration was so fetid, that when in the bath everybody shunned them. (Ad Iliad. xiii, 6.)

SECT. XXXVII.—ON AFFECTIONS OF THE STOMACH, OF THE HYPOCHONDRIA, AND OF THE BELLY.

Those complaints which occur in fevers, such as loathing of food, bulimia, the canine appetite, atony of the stomach, deliquium animi, thirst, hiccough, nausea, and syncope, have been treated of sufficiently in the Second Book, and it would be out of place to say more about them. But inflammations of the orifice of the stomach and of the liver require the admixture of astringents; for, if treated by the relaxant method alone, it will prove dangerous. It will be necessary, then, whether oil be affused on the part or a cataplasm be applied, to add some of the astringents to it, such as wormwood or the nard ointment; or that of apples, or of quinces may be boiled in it. The follow-

ing is a cerate which we frequently use: Of white wax, oz. j, (but if in summer, dr. vij); of aloes and mastich, of each, dr. j; add of the oil of unripe olives, or of apples and of nard, when going to use it, as much as will be sufficient to give it consistence. Or, if the stomach require greater astringency, as not being able to retain the food, mix also of oil of unripe olives, dr. j; or of the juice of wormwood an equal quantity; and, thirdly, of the juice of hypocistis, of wild vine, and of sumach. We must make the quantity of the cerate proportionate to the number of the other medicines. When the inflammation becomes protracted and hard, we must apply more complicated remedies, containing aromatic, emollient, and discutient ingredients, such as that prepared from melilot, the philagrianum, and the fragrant. And a necklace of green jasper appended from the neck, so as to touch the stomach, is of great use. In hot intemperaments of the stomach, or ardent affections of it with prostration or deliquium animi, or anorexia from any other cause than fever, give cold water with the juice of unripe grapes, or the decoction of quinces, or of vine shoots, or the powdered seed of cucumber with cold water. Apply to the stomach a bladder filled with cold water, or the shavings of gourd. And the pills called Adipsa are to be given, as described when treating of thirst. The following medicine is proper for cooling and strengthening a watery stomach: Of green rose-leaves, dr. vj; of liquorice juice, dr. iv, mix with sweet wine, and make into an electuary, to be allowed to melt under the tongue. When, on account of a gross phlegm, medicines are required to heat and incise it, the following one will be useful: Of the rind of fennel-root, oz. ij; of vinegar, a sextarius and a half; of aloes, oz. iij; of honey, lb. iv; the roots being boiled in the vinegar, are to be squeezed out and thrown away, and honey being added, it is to be boiled to a proper consistence, and then powdered aloes sprinkled upon it. Give three spoonfuls of it with water. Some prepare it without the aloes. The composition from calamint is also proper for such cases. When the food turns acid on the stomach, give in water for drink a drachm of coriander seed sprinkled upon it like polenta, or one spoonful of mastich, or two spoonfuls of the seed of the white lettuce. The following is a compound medicine: Of pepper, dr. j; of the seeds of dill, dr. iij; of cumin, dr. iv; triturate, and give at bedtime one

spoonful in diluted wine. Those who form black bile, and have the stomach inflated, may, during the exacerbations, apply to it sponges soaked in the strongest vinegar, after which, if the complaints continue, alum with pulverized copper may be added to honey, and applied. Let them drink the juice of endive, or let mint be sprinkled upon the draught. When the stomach is inflated and distended, mix a moderate quantity of honey and pepper with the decoction of calamint, and give. For subversion of the stomach, take of the juice of the kernels of the unripe pomegranate, p. iij; of the juice of mint, p. j; boil until it thicken, and give a mystrum (*two spoonfuls?*) of it before a meal.

For salivation of the stomach. Rinse the mouth with vinegar of squills, the sauce of pickled olives, or the decoction of the green leaves. Or a very small quantity of the same may be swallowed. A still more effectual remedy is aloes dissolved in water. For those who cannot retain their food (who were particularly called stomachics by the ancients), mix with honey the flour of fenugreek and the dried seed of mallows in powder, and apply. The cerate consisting of wax, the lees of oil of iris, and castor, is also proper.

On anorexia. Anorexia is a loathing of food, either from the prevalence of an intemperament in the stomach, or a collection of humours. You may know a hot intemperament by the thirst, by the fetid and feculent eructations if compelled to take food, and from the circumstance that cold and intractable substances are most easily digested; and a cold by the opposite, for they neither have thirst, nor can they endure cold things, and they have sometimes acid eructations. Of those who have anorexia from humours, they who suffer from thin and sharp humours, have gnawing pain at the stomach, and are more affected with nausea and thirst. When the humours become putrid, they sometimes have fever. When they suffer from thick and viscid humours, these for the most part neither occasion acute pain nor thirst, but the common symptom of all these cases is nausea. Wherefore, if the humours are contained in the cavity of the stomach, they vomit them up; but, if they are absorbed and infarcted in its coats, they have nausea only, but do not vomit, unless it be when they have taken food. Those, therefore, who have anorexia from a hot intemperament, should take cooling

things for diet, more especially such as are prepared from vinegar. Wherefore give them bread that has been soaked in oxycrate, or oxycrate itself to drink, and oxygal (vinegar and milk), and that which is called melca by the Romans (it is a condiment from milk), endive, lettuces, and sometimes cold water: all these moderately, according to the degree of the prevailing intemperament; for the immoderate use of them is not only not beneficial, but often renders the complaint utterly incurable. When the affection is connected with coldness, it is to be cured by the opposite remedies; wherefore give to drink old wine and prepared wine, hydrogarum, and the decoction of anise, rue, and Macedonian parsley, and pepper, in hot common water; or the composition from the three peppers, or that from calamint. You may give also the theriac from vipers, which is also not inapplicable to those who loathe food from a collection of humours. Garlic, both as food and as medicine, is applicable to them. When the anorexia proceeds from a collection of humours, you may evacuate such as are thin and sharp, either by vomiting or purging downwards, and they may readily be made to vomit, by drinking beforehand tepid water, or hydromel diluted with a large quantity of water. But it will be better to give previously some moistening food, such as the juice of ptisan, or the yelks of eggs. How to produce easy vomiting has been explained in the First Book. But if the patient be hard to make vomit, it will be better to determine the matter downwards, having previously diluted their system by means of plenty of mild food. The cathartic medicine may either be the picra from aloes, that from quinces, which also admits of scammony, or that from rhodomel. If it be possible without the scammony to evacuate by a large dose of aloes, it will be better, because the scammony is bad for the stomach. When the anorexia proceeds from thick and viscid humours, you may cure them by attenuating and incisive remedies, such as oxymel, and the preparations from it and brine, as capers, olives, mustard, and the like. The remedies recommended for anorexia from a cold intemperament are not inapplicable to these, and more particularly after evacuation. You may evacuate them by the oxymel called Julian. Externally you must use those unguents and emollient ointments which have power to warm and strengthen the stomach, such in particular as that from the unripe grape, that called Marciatum, and all the common

ointments; also such epithemes as the Baium, the fragrant, and the like. They ought particularly to have recourse to exercises and friction. When dyspepsia and anorexia arise from a cold and liquid humour, or such an intemperament, the medicines composed from quinces will be applicable to them, I mean that called meloplacuntion, that from the juice of apples, and that from the flesh of them, and that which is prepared from the citron. Also the malagmata or emollient unguents, such as the Marciatum, that from the juice of the unripe grape, the Baium, Polyarchium, and such like. When there is an ulcer in the stomach or bowels, the patient must abstain from all acrid food and drink, and use remedies of a soothing nature, such as draughts without oil, and those from starch, Samian earth, Lemnian earth, and milk, or a small quantity of honey, so as to purge without griping. A convenient epitheme is prepared from dates, the flour of quinces, and a cerate from quince-ointment, or rose-oil with ammoniac and frankincense; and also the epitheme of Nileus, the plaster from willows, and the Icesian may be used. You may know that an ulcer exists by blood, pus, or the scabs of a sore being vomited up.

For those whose stomachs are enervated and in a state of atony, and who, for that reason, do not digest their food, or vomit it up. Of aloes, of masucha, of mastich, of storax, of each, oz. ij; of wormwood, oz. iv; of the flowers of the wild vine, oz. iij; of Gleucine oil, oz. vj; of quince-ointment, oz. iij; of wine, q. s. Some also add of cyphi and roses, of each, oz. ij. These things, being powdered, are received upon purple or wool, and applied to the stomach. But some, by adding of wax, oz. vj, make an epitheme of it.

For iliac affections of the stomach, that is, strong and spasmodic pains. The trochisk of the Amazonians is the best medicine in this case. An account of it, and of the ingredients which enter into the composition of other compound remedies for the stomach, you will find in the last Book, where Compound Medicines are treated of.

COMMENTARY. See Aretæus (Morb. Chron. ii, 8); Cælius Aurelianus (Pass. Tard. iii, 2); Celsus (iv, 5); Galen (de Med. sec. loc. vi); Oribasius (Synop. ix, 10); Aëtius (ix, 1); Alexander (vii, 5); Actuarius (Meth. Med. iv, 5); Octavius COMM.

COMM. Horatianus (ii, 16); Marcellus (de Med. 20); Avicenna (iii, 13, 1, 2, 3); Serapion (i, 1); Avenzoar (i, 15); Averrhoes (Collig. v, 54); Haly Abbas (Pract. vii, 2, Theor. ix, 24); Alsaharavius (Pract. 16); Rhases (Divis. 59, Contin. xi.)

To all these authors, almost every one of whom has treated of these complaints more fully than Paulus, or upon a different plan, it is quite impossible for us to do justice within the narrow limits to which we confine ourselves in these annotations. We shall, therefore, direct our attention principally to Celsus, and merely add a few remarks from the others. The stomach, he says, is affected by great heat, inflation, inflammation, and ulceration; by phlegm or bile; and by resolution, which is a common and fatal complaint. Heat is to be cured by cold external applications, such as vinegar and roses, along with cold drink. Inflation we shall see treated of in the next Section. Inflammation which is attended with pain is to be treated by rest, abstinence, sulphurated wool, and wormwood, when fasting. If attended with ardor, he prescribes cold and repellent applications, occasionally exercise, and a fuller diet. Ulceration is to be cured by exercise, friction of the extremities, smooth and glutinous food, and avoiding every thing that is acid and acrid. Redundance of phlegm is to be treated by emetics, exercise, friction, hot drink, and hot food. When bile prevails he recommends laxatives, potions of wormwood, gestation, or a sea-voyage; emetics, if they can be conveniently borne, and suitable food, so as to avoid indigestion. Resolution, he says, is a severe affection of the stomach, when it cannot retain the food, and the body wastes. The bath, he says, is useless, but exercise of the upper parts of the body peculiarly proper. He recommends pouring cold water on the stomach, swimming in the same, and living on cold food, rather such as is difficult to digest than what will readily spoil on the stomach. Hence, he says, some digest beef. Undiluted austere wine, either cold or very hot, is proper. If there is vomiting with pain, he directs us to apply over the stomach, wool or sponge soaked in vinegar, or cold cataplasms; or, if the pain be more severe, a cupping-instrument; then bread which has been steeped in cold diluted wine is to be given. If this is not retained, some smooth article of food not disagreeable to the stomach is to be administered; and, if this be not retained, a cupful of wine is to be taken every hour until the

stomach becomes settled. He also praises an acid mixture, containing pomegranate, endive, &c. COMM.

Aretæus gives a lively description of the feelings of a dyspeptic. The student who, heedless of the allurements of the senses and of the ties of nature, follows his divine pursuits with indiscreet ardour, and neglects to take proper food and exercise, is said to be particularly liable to affection of the stomach. The cure, he says, is to be effected by gestation, vociferation, a suitable diet, and indulgence of the patient's caprices as far as possible. Wormwood, ginger, aloes, and mastich are also proper.

Alexander properly remarks that disorder of the stomach affects sympathetically the heart and brain. He treats fully of inflammation of the stomach, for which he directs us to give relaxants and tonics, such as wormwood and mastich. He further recommends the application of a plaster, composed of emollient and stimulant ingredients, such as wax, turpentine, ginger, opopanax, &c. It is singular that he and most of the ancient authorities have omitted to mention venesection for this complaint. We therefore entertain some doubts whether they meant by it the gastritis of modern Nosologists, which, by the by, is of so rare occurrence, that some late writers of high name are of opinion that it never occurs spontaneously. (See Christison on Poisons.) Some of the ancient authors, however, do recommend venesection in this complaint, as for example, Serapion, Rhases, Avicenna, and Haly Abbas. Horatianus recommends the same for sudden pains of the stomach. Cælius Aurelianus, while treating in general terms of stomach complaints, recommends bleeding, "si in vehementiam passio venerit." He also prescribes cupping and leeching. His account of these affections is highly interesting, but so circumstantial that we dare not venture even upon an abridgment of it. Haly Abbas speaks of the inflammation ending in suppuration. To Alsaharavius we particularly invite attention. Rhases gives a copious statement of the opinions of all preceding authorities on this subject.

SECT. XXXVIII.—ON INFLATION OF THE STOMACH.

The formation of flatus in the stomach arises from the juices or food being dissolved into vapours by a gentle heat. For cold, as it is not of an attenuating and dissolving nature, does not engender flatulence; whilst a violent heat not only attenuates, but likewise dissipates, and thus prevents the formation of flatulence. But a lesser degree of heat dissolves and changes the food, but not sufficiently, and hence flatus is gendered. Wherefore we must attenuate them by calefacient medicines—boiling in oil the seed of cumin, of parsley, of cow-parsnip, and of carrot. When the affection partakes of cold, you may boil rue, bay-berries, gith, and fennel in the oil, and mix bitumen and oil of bays. But if the pain be attended with inflammation, instead of calefacients, you may use relaxants, making a decoction of dill, and mixing with it the fat of a cock and of a goose. Those who have flatulence may be relieved by the decoction of a fasciculus of poley, or a decoction of calamint, having a small quantity of honey and a drachm of pepper mixed with it. These remedies must be applied when the pain is violent; but if it is moderate, fomentations from millet will be sufficient. But a large cupping-instrument that will comprehend the navel often removes the symptom at once. Castor also is of use to them, when taken in a draught with oxycrate, and when applied externally with Sicyonian oil; and it also cures flatulence when attended with tormina. But the ankles of a swine burnt, and taken in a draught, cure tormina and flatulence; and the round birthwort does the same. Pains from obstructions of the bowels, or flatulence arising from thickness of the humours, or from cold, are relieved by drinking undiluted wine after food; and, if sleep follow, it completely removes these complaints.

COMM. COMMENTARY. See all the authors referred to in the preceding Section.

Our author's treatment, which consists of dry cupping, dry fomentations, and the internal use of calefacients and wine, is what Celsus also recommends. He likewise speaks favorably of exercising the upper parts of the body, of friction, and of using purgatives occasionally, and sometimes, though rarely, the

bath. Serapion, Rhases, and Avicenna, recommend similar treatment, namely, purgatives and aromatics, such as aloes, anise, calamint, cumin, and the like. Haly Abbas forbids all flatulent food, such as pulse, milk, and grapes; recommends the bath after much exercise, and before dinner, and the stomach to be rubbed, and a cataplasm of salt and cumin applied to it. He also prescribes many calefacient and carminative articles, such as anise, rue, castor with old wine, also the peppers, theriac, mithridate, hiera picra, &c. Alsaharavius recommends aromatics and carminatives, and afterwards that the pit of the stomach should be rubbed with calefacient oils. Averrhoes directs us to give all solid food, as flesh, puddings, &c. quite cold; but spoon-meats may be eaten as warm as the blood or somewhat warmer. This method, he adds, will clear the head and stomach of wind, beget finer blood, brisker spirits, and cause a lively circulation of all the humours. COMM.

Rhases and Avicenna describe *ulceration* of the stomach very accurately, and also thickening of its coats.

Avicenna mentions *rupture* of the stomach, but does not say whether he alludes to spontaneous rupture or rupture from accident.

Actuarius has given a more distinct account of *hæmatemesis* than any other of the ancient authorities. He says the blood may be brought up either pure or of a dark colour, and it may be occasioned either by external injuries or proceed from constitutional causes. The constitutional causes are commonly either general plethora or atony of the liver. In certain cases, he says, it proceeds from rupture of the vessels, and in others from relaxation of them, in others again from corrosion. In *melæna*, he says, the skin is pale. (De Diagnos. i, 39.)

SECT. XXXIX.—ON CHOLERA.

Cholera is an immoderate disorder of the belly, with discharges upwards and downwards, arising from continued indigestion of the food. Persons are affected with indigestion sometimes from the badness of their food, and sometimes owing to a redundance of depraved humours. Wherefore, if the patient be seized with nausea and lancinating pains, while the food remains

in the stomach undigested, we must order him to drink tepid water, and to produce vomiting by putting his fingers or feathers down the throat. We must also encourage the discharge by the bowels. After the evacuation of the superfluities, he must take rest, and apply warmth to the hypochondrium, by means of sweet oil, with some wine; or by the oil of mastich, or of spikenard, if it is winter: and he must be allowed to sleep. After digestion has been accomplished, let him have recourse to baths and wholesome food. When the discharge is immoderate, it will be sufficient at first to try those things which are mentioned in the Second Book for disorder of the belly. But when the discharge continues, and the belly loses its tone, and the pulse gets small and dense, we must apply a cataplasm of dates, with flowers of wild vine, acacia, the juice of hypocistis, and pomegranate rind. For drink, give a cupful of moderately cold water to swallow; or, what is still better, a decoction of roses, of the flowers of wild vine, of sumach, or of vine-shoots; or we may give the juice of an acid-sweet pomegranate, sprinkling upon it a little mint. When the excretions are more acrid, and heat and thirst come on, we must give the seed of cucumber, with three cupfuls of water; and succory and lettuces boiled in oxycrate are to be used for food. When the discharge cannot be stopped, we must administer some of the austere wines; if the patient be free of fever, the Palmatian, the Aminæan, or palm wine, or that from unripe grapes, with honey; but when he has fever, pomegranate wine, or myrtle wine, or Cibyratic hydromel for drink, and along with crumbs of bread, alica, or chondrus. If he loathes food from grain, he may chew some summer fruit, or medlars, pears, quinces, or pomegranates, but he must spit out the fleshy and hard parts. When he cannot retain the food, let a large dry-cupping instrument be fastened over the stomach, and while it is on let some of the afore-mentioned food be taken. For the spasmodic contractions apply to the muscles hot rags dipped in oil, and liquid cerates, containing some castor and Sicyonian oil; but before applying them let hot water be poured upon the legs. If he cannot get sleep, we must have recourse to the remedies recommended for watchfulness; and if his strength permit, he may take a potion from poppy-heads. When the disease is on the decline, he may be put into a bath, and recruited with chickens, pigeons, the feet of swine, or the like. Diarrhœa,

being a corruption of the food, for the most part ceases spontaneously, if no more food be taken until after the complete digestion and evacuation of the corrupted matters; but if it continue, we must use the remedies applicable to cholera.

COMMENTARY. Consult Hippocrates (Epidem. v, 4, et alibi); Galen (Comment., de Fac. Part., de Rat. Vict., de Med. sec. loc. viii); Aretæus (Morb. Acut. ii, 5; de Curat. M. A. ii, 4); Celsus (iv, 11); Alexander (vii, 16); Aëtius (ix, 12); Oribasius (Morb. Curat. iii, 11); Leo (v, 5); Actuarius (Meth. Med. iv, 5); Nonnus (164); Cassius Medicus (Problem.); Scribonius Largus; Cælius Aurelianus (Morb. Acut. iii, 19); Octavius Horatianus (ii, 16); Marcellus (30); Avicenna (iii, 16, 1); Serapion (iii, 14); Avenzoar (ii, 1); Alsaharavius (xvi, 20); Haly Abbas (Pract. vii, 14; Theor. ix, 25); Rhases (Divis. 60, Contin. xi; ad Mansor. ix.) COMM.

Hippocrates in his 'Epidemics' has given several well-detailed cases of cholera. In one, the patient drank hellebore in the juice of lentils, and vomited; he became cold, and was put into the hot hip-bath, where he regained his heat and recovered. In another place, he says that the disease is, for the most part, occasioned by unwholesome food, such as pork improperly boiled, pot-herbs, summer fruits, &c.

Aretæus defines cholera to be a retrograde movement of the matters in the body upon the stomach and intestines, consisting of a discharge upwards and downwards of bile, which, if the disease proves fatal, becomes black; and, at the same time, the extremities are cold, with profuse sweats, pulse small and dense, constant straining to vomit, and tenesmus. He also makes mention, among the symptoms, of spasms and contractions of the muscles in the legs and arms, borborygmi, tormina, and syncope. The complaint, he says, is occasioned by continued indigestion, and proves fatal by superinducing convulsions, suffocation, and retching. With regard to the treatment, he cautions us not to stop the discharge at first, but to encourage it by giving frequently some tepid water; and when attended with tormina and coldness of the feet, to apply to the belly hot oil of rue, and rub the legs to restore heat. When the fæces are all evacuated, he recommends some cold water to compose the stomach; and when the pulse sinks and becomes frequent, while at the

COMM. same time there are profuse sweats and deliquium, he approves of adding a small quantity of wine to the water. It is to be of a fragrant and astringent kind, so as to strengthen the powers of the system. When all the symptoms get worse, when spasms of the legs occur, and the pulse becomes insensible, he advises us to give more wine and water. Should the vomiting continue, we must return to very hot drink and hot food, for, he remarks, the transition often proves beneficial. When all these fail, a cupping-instrument is to be put on between the shoulders or below the navel. He afterwards speaks of such applications as those recommended by our author, namely, calefacients applied to the belly, chest, and legs. He concludes with saying, that, if the symptoms, instead of improving, should get worse after this treatment, it will be proper for the physician to accelerate his retreat.

When cholera is not attended with fever, Galen approves of giving a piece of bread soaked in diluted wine, of cold drink, and of applying cupping-instruments to the belly. When the patient is strong, he even recommends the cold bath. He directs afterwards astringent food, and also speaks of clysters, old wine, and asses' milk. He mentions with seeming approbation that Asclepiades gave tepid water at the commencement.

Celsus depends most upon tepid water, dry cupping, and sinapisms to the belly. In extreme cases, he prescribes a light fragrant wine diluted with water.

Alexander's account is very minute, but little different from that of Aretæus. In certain cases, he permits poppies to remove insomnolency and wine to support the strength. Like Hippocrates, he describes correctly dry cholera. In this variety, which he attributes to a bilious humour, he recommends purging with scammony or the picra of aloes. But in particular he approves of friction and the application of strong ligatures to the extremities; to the arms and hands, when the evacuations are by the belly; and to the feet and legs, when by vomiting from the stomach.

Aëtius, Oribasius, Actuarius, and Nonnus treat of the disease in nearly the same terms as our author.

For cholera, Marcellus recommends various astringent remedies, both externally and internally. Myrtle-wine, he says, will stop the vomiting. He also commends opium.

Octavius Horatianus calls cholera "omnibus acutis ægritudinibus velocior." Like the others, he recommends draughts of tepid water at the commencement, and wine and aromatics in extreme cases. COMM.

Cælius Aurelianus, with his accustomed accuracy, gives a complete history of the symptoms of this disease. The bile which is vomited, he says, is at first yellow, afterwards green, and at last black. His treatment is very similar to that of Aretæus, namely, tepid water at the commencement to facilitate vomiting, sponges out of cold water applied over the stomach, or else cupping-instruments with much heat; aromatics, bread soaked in wine, and the like. He condemns Hippocrates for sanctioning the giving of hellebore. He blames Diocles for recommending southernwood, which, he remarks, is a very harsh medicine; and also for allowing milk, which, he says, is apt to grow acid. He finds fault with Heraclides Tarentinus for trusting to opium and henbane.

Cassius Medicus accounts for the coldness of the extremities and contractions thereof upon the supposition that they are occasioned by the vital spirits having left them and been determined to the stomach.

There is nothing very original in the works of the Arabians. Haly remarks that cholera consists of a discharge of bile. He inculcates as a settled principle of treatment, that, when the strength continues good, and the discharge not immoderate, the vomiting is to be encouraged by giving tepid water with oil of sweet almonds to drink. When there is great prostration of strength and tendency to deliquium, he directs us to sprinkle water on the patient's face, to apply ligatures to his limbs, and to rub his feet and legs with a calefacient oil. When the discharge cannot be got otherwise stopped, he advises us to apply a cupping-instrument over the stomach. Alsaharavius, like the others, directs us to promote the vomiting at first by giving tepid water. Among his other remedies, he recommends an infusion of aloes and wormwood. Rhases recommends draughts of tepid water, the application of snow over the stomach, ligatures to the extremities, wine, and astringents. He, Avicenna, and most of the authorities direct us to encourage sleep. Avicenna's plan of treatment is exactly the same as that of Rhases.

COMM. With respect to diarrhœa, Celsus recommends us to give an emetic; to anoint next day with oil; to give moderate food and undiluted wine; and to apply over the belly a cerate with rue. Cælius Aurelianus enjoins at first rest and abstinence, then astringent applications to the belly, next day astringent food, and then wine and the bath. Haly Abbas remarks that a diarrhœa is not to be rashly stopped unless it become excessive, in which case astringents are to be given, such as galls, roses, pomegranate fruit, &c. Serapion and Rhases mention an emetic as a remedy for diarrhœa.

For the cure of diarrhœa, the veterinary surgeons recommend at first bleeding and hot water, and then astringents, such as sumach and pomegranate rind. (Geopon. xvi, 8.)

SECT. XL.—ON LIENTERY AND CÆLIAC AFFECTION.

There are two varieties of lientery: the one arising from superficial ulceration of the intestines, and (according to some) from a cicatrix occasioned most frequently by dysentery or other defluxions; and the other from an atony of the retentive faculty of the bowels: the second variety being in our opinion connected with the cæliac affection; for in it the stomach being unable to concoct and distribute the food, it is discharged downwards in a smooth, undigested, and liquid state, the stomach in all cases labouring under a defluxion. But in lientery the passage of the food is quick, and the indigestion more intense; so that the appearance of the food which has been taken is preserved, and by these circumstances it is more especially distinguished from cæliac affection. Wherefore we must apply cataplasms of linseed with dates. And lentisk and bramble boiled with oxymel is a very effectual remedy; but, when there is flatulence of the bowels, we must mix some cumin, dill, and rue. If the defluxion increase, we may add quinces, moist alum, acacia, hypocistis, galls, some or all of these. Cerates also made of myrtle-oil with some astringent wine are useful, and the caleficient epithemes from the bay-berries, or from seeds. But that from the flowers of wild vine, that from grape-stones, and that ascribed to Antyllus are more astringent. But the one called Erythrian is wonder-

fully efficacious. When the disease is protracted, we must have recourse to a dropax (calefacient plaster) along the abdomen, and the cerate from mustard, or mustard itself. The drinks which are taken should be simple, containing plantain-seed, or the seed of dock, or the rind of pomegranate, or dried services, or dried unripe grapes from the Aminæan vine, to the amount of three oboli; which things, when there is no fever, are to be taken in six cupfuls of an austere wine, but when there is fever in rain water. It will injure the stomach less if the dried crop of hens be sprinkled upon the drink. But diuretics, such as parsley, maiden-hair, and the like, occasion a metastasis of the fluid; and, in like manner, the compound ones, as that of Polyides (it is the sigillum), the trochisk from amber, that from Egyptian thorn, the one called clidium, and that from seeds. The following one is most excellent: Of the seed of the wild dock, oz. iss; of plantain-seed, oz. j; of the juice of the hypocistis, dr. vj; of gum or acacia, dr. iij; add to a decoction of the juice of quinces boiled to a third part.—*Another:* Of cumin, of pepper, of Syriac sumach, of the flowers of the wild pomegranate, of each, oz. iss; of pomegranate-rind, oz. j; of laserwort, oz. ss; either sprinkle a drachm of it dried upon the drink, or mix with oxymel, and give morning and evening.—*Another:* Of black myrtle, a spoonful and a half; of anise, of dried roses, of the flower of wild vine, of each, half a spoonful; of dates, xx in number; make trochisks, and give a drachm with water or diluted wine. And the theriac from vipers is also an excellent remedy for them. When the discharge is acrid and bilious, the food should be from chondrus, rice, alica, and the like; but some of the astringents should be boiled along with them, such as pears, apples, quinces, medlars, and such like. Boiled milk is also proper. The drink should be either a light watery wine, or some of the sweet potions. If the discharges consist more of phlegm, we may change the diet to the opposite kind, mixing the seeds of some of the stomachic vegetables, anise, cumin, or the seed of parsley. The dried lentil twice boiled is often of use to them, when eaten with a little vinegar or oxymel, and cabbages likewise twice boiled; but it is better to make the second boiling in oxycrate. They should drink some of the older and more heating wines.

COMM. COMMENTARY. Hippocrates (Aphor., de Affect.); Galen (in Hipp. Aphor. Comment. vi, 1; de Med. sec. loc. vii); Aretæus (Morb. Chron. ii, 10); Celsus (iv, 16); Nonnus (166); Theophilus (de Alvi Retrim. 2); Actuarius (Meth. Med. i, 42); Aëtius (ix, 37); Oribasius (Morb. Curat. iv, 88); Leo (v, 5); Psellus (Opus Medicum); Scribonius Largus (xi); Marcellus (de Medicam. 27); Avicenna (iii, 16, 1); Serapion (iii, 18); Haly Abbas (Theor. ix, 25, Pract. vii, 16); Alsaharavius (Pract. xvii, 1); Rhases (ad Mansor. ix, 72; Contin. xiii.)

In lientery, says Hippocrates, the food passes through the bowels in a liquid state and without change. Galen remarks that the affection may be defined to be a loss of digestion, the food having undergone no change in consistence, smell, or quality, while in the bowels. The intestines, he says, are either in a state of ulceration and great tenderness, or they have lost their retentive faculty.

Aretæus calls it a disease arising from broad ulcers of the intestines when the food passes through the bowels not at all altered. With respect to the treatment, he merely says that an emetic after food will remove it.

Celsus recommends astringent food, stimulant and rubefacient applications externally; and afterwards exercise, friction, insolation, and vomiting, which, he says, Hippocrates directed to be produced with white hellebore when other things fail.

Dioscorides states that when the inner membrane of a cock's stomach has been dried and reduced to powder, it may be given triturated in wine with great advantage in stomach complaints. Our author, it will be remarked, makes mention of this medicinal article.

Archigenes and Aëtius describe cæliac affection as an atony of the intestines, so that the food is not retained until it is digested. They treat of it at great length, their principal remedial measures being purging, vomiting, and astringent applications. According to Psellus it arises from superficial ulceration of the intestines. Psellus defines lientery to be a loss of the retentive faculty of the bowels, so that the food passes undigested in a liquid state.

Serapion for lientery directs us to give astringent decoctions, and to apply to the belly an astringent epitheme containing galls,

roses, pomegranate-flowers, &c. the food to consist principally of millet and the like. He also recommends a mixture of goat's milk and water boiled until the water evaporate. When the stomach is loaded he prescribes an emetic. In cæliac affection he directs us to strengthen the intestines by astringents internally and externally. Haly Abbas defines lientery to be a quick discharge of the food in an unchanged state. It arises, he adds, from immoderate debility of the retentive faculty of the intestines, or from excess of the expulsive. It is said to be generally caused by ulcers which, being irritated by the food, stimulate the intestines to expel it. He recommends a variety of remedies, most of which are either astringents or acids, such as balaustine, rind of acorns, mastich, sumach, galls, roses, &c. COMM.

SECT. XLI.—ON TENESMUS.

Tenesmus is sometimes the precursor of dysentery, but often it prevails alone for a short time, and then ceases. The affection is an irresistible desire of evacuation, discharging nothing but some bloody or mucous matter, which is the cause of the whole complaint, being an œdematous inflammation in the rectum, which creates the impression of fæces lodged in the intestine, and a desire of evacuation. And Galen relates that a stone has sometimes been discharged by the anus in attacks of tenesmus. But tenesmus often arises in consequence of fæces being retained in the small intestines, and is increased by astringents and obstruents, but immediately removed by acrid injections, such as honied-water with salts, or by any of the emollients taken by the mouth, such as damascenes, dried figs, the herb mercury, or the whey of milk; for when the fæces are evacuated, the complaint immediately ceases. When the tenesmus occurs without such a cause, it will be proper to allay the inflammation by barley-flour heated, the embrocations from wine, myrtle-oil, rose-oil, or the oil of unripe olives, applied to the loins and lower belly. The mucous matters shut up in the rectum must be cleared away by an injection of honied water. And salt and water when injected often effects the purpose, or six drachms of salts in a hemina of hot water. But we must mitigate the pain and intense sufferings by sitting in a hip-bath

of fenugreek, mallows, or linseed. Sometimes the following hip-bath will effect the purpose: Of bramble, of myrtle, of the flowers of the pomegranate, of bays, and of green cypress shoots, mixing these in equal parts, boil in water. It is the Marcellian. When the inflammation and irritation are deep-seated, we must use injections of some of the juices of grain boiled with some of the astringents. And sweet oil injected and retained for several hours has the effect of removing the violent pain. When the desires to go to stool are frequent, we must apply a ball of warm threads to the anus, or warm bran in a bag, or a sponge, or some such thing.

COMM. COMMENTARY. See the authors referred to in the preceding Section.

Celsus recommends the tepid bath, emollient and astringent applications to the rectum, such as butter and roses, or alum wrapped in wool and applied, the remedies for tormina, and an austere wine every alternate day.

Aëtius may be referred to as an author who has treated of this affection in a very accurate manner, although nearly to the same effect as our author. Among other things he mentions the application to the anus of a sponge soaked in a solution of galls in vinegar.

Nonnus defines tenesmus to be an inflammation of the rectum, and says that it is to be benefited by injections of the oil of rue, or of wine and honey with brine; by hip-baths of astringent decoctions, such as myrtles, bays, &c. or by fomentations with a sponge.

Avicenna describes two varieties of tenesmus, the false, which is occasioned by the lodgment of hardened fæces in the intestines, and is to be cured by emollient clysters, &c.; and the true, which, if occasioned by cold, is to be relieved by fomenting the parts with a sponge or the like soaked in hot water; if by hard pressure, a sponge is to be squeezed out of hot oil and applied; if by an aposteme, it is to be treated upon general principles by bleeding and embrocations; if by a flux, remedies suited to that complaint are to be given; and, if by ulcers, the common applications to them are to be used. Haly Abbas treats fully of tenesmus, like Avicenna. In several of his prescriptions poppies and opium occur. When produced by retention of

scybalæ, he recommends powerful evacuants, such as colocynth, prunes, turbit, scammony, &c. One of Serapion's prescriptions contains burnt lead, sumach, myrrh, &c. By a stone, said by our author and Galen to be sometimes discharged in cases of tenesmus, must have been meant an alvine concretion of a hard nature. COMM.

SECT. XLII.—ON DYSENTERY.

Dysentery is an ulceration of the intestines, sometimes arising from the translation of tenesmus, or some of the disorders of the bowels formerly mentioned, and sometimes being itself the primary affection; and it is attended with evacuations, at first bilious, and of various colours, then, accordingly, bloody, and at last ichorous, like that which runs from dead bodies. Dysentery, arising from black bile, is necessarily fatal, as indicating an ulcerated cancer. If, therefore, the appearances of ulceration be discharged, mixed with the fæces, and attended with pains and tormina, you may be sure that the ulceration is seated in the small intestines, and is to be remedied by medicines swallowed by the mouth; but if the fæces be passed unmixed with the blood, it is an affection of the large intestines, and will yield rather to clysters. When there is a great discharge of blood by itself, the disease is called the bloody dysentery. Sometimes the blood which is discharged is blacker than natural and shining, owing to the liver's not digesting properly the food which is sent to it; and owing to an atony of the retentive or of the alterative faculty of the stomach, it is discharged from it like the washings of newly-killed flesh. This is called hepatic dysentery, and will be treated of along with the affections of the liver.

In general, therefore, we must use those things which were recommended for cæliac and other preternatural evacuations; but, in particular, the Lemnian earth cures a spreading dysentery when drunk or injected, the intestine being previously washed out with honied water, and afterwards with salt water; and the juice of purslain is proper for dysenteric affections when drunk, or the purslain itself when boiled in oxycrate and eaten. Plantain also is proper, and the fruit and leaves of the

bramble, the decoction of the root of marshmallows, the herb horsetail drunk in water or wine, and the juice of it, the unripe fruit of the mulberry dried, and, still more, bramble-berries when similarly dried. Eggs boiled with vinegar and eaten, dry up fluxes of the belly; but it will answer better if, mixing with them some of the articles which are good for dysentery, you fry them, and give to eat. The wine of unripe grapes is most useful in these cases, and the red sumach, and the juice of it, the rind of pomegranate, galls, grape-stones, medlars, myrtles, cornels, the ashes of snails roasted whole. The following is a compound medicine: Of the ashes of snails, p. iv; of galls, p. ij; of pepper, p. j; reduce to a fine powder, and sprinkle upon the condiments, or give to drink in water, or a white watery wine. It greatly helps dysenteric patients, when the ulcers are not putrid. But the dried dung of dogs who have eaten bones, when drank in milk which has been curdled by having heated pebbles put into it, is of great service. The following are compound remedies: The trochisk from Egyptian thorn, that of Philip, that from hartshorn, that from seeds, and the Trigonus. The pills from macer are excellent remedies. The following is an admirable one: Of opium, of saffron, of Indian Lycium (*catechu?*), of acacia, of sumach, of frankincense, of galls, of hypocistis, of pomegranate-rind, of myrrh, of aloes, equal parts; give in water to the amount of three oboli.—*Another*: Of sumach, dr. viij; of galls, of pomegranate rind, of each, dr. iv; give in a spoonful of wine.—*Another*: Of sumach, dr. viij; of galls, of acacia, of gum, of each, dr. ij; of opium, dr. j; give one drachm in diluted wine. This linctus will suit with them: Of black myrtles, one sextarius; of Syriac sumach, one sextarius; of Theban dates, lb. ij; of the flesh of quinces, lb. j; ten sour pomegranates with their rind; of astringent wine, one sextarius: boil to a third, and, having strained, add of honey, lb. vj; and, having boiled to a proper consistence, give for a linctus. It is clear, that the cataplasms should be made from astringents the materials of which you are acquainted with. On account of the tenesmus, which proves a troublesome symptom in dysentery, injections made from the juice of rice, chondrus, or the like, with the tallow of goats, and likewise those recommended in the section on Tenesmus will prove serviceable. But, if there is a discharge of blood, we must inject

the juice of knotgrass, or of plaintain, with acacia, hypocistis, or the like. But, if this symptom be urgent, we may inject some styptic, such as the ashes of unwashed wool, or of new sponge, which has been soaked in liquid pitch, or the blood of an ox, or liquid alum; or it may be soaked in the juice of asses' dung in like manner, and burnt. And the trochisk of Andron is an excellent remedy, and that of Musa, and the like. But suppositories of collyria are among the most effectual remedies, more particularly when the discharges are attended with pain. When there is a spreading ulcer in the intestines, which you may ascertain from the fetid smell and putridity of the discharges, and from its not having occurred at the commencement, but after some interval, we must use escharotic injections, such as the trochisks called Faustiani, that from paper, the Bithynian, the Thronian, and that from cork, injected in the decoction of dried lentils, or of some of the other astringents. And the following enema is of approved efficacy: Of burnt omphacis (it is the cavity from which grows the acorn which the tanners use), of arsenic, of comfrey, of Syriac sumach, equal parts. Mix about two spoonfuls of these when pounded together with the juice of rice, and the juice of alkanet that has the thorny, broad, and black leaf (which they call *chærospelethron*), and with the white of eggs, to the amount of two or three ounces; and give for an injection. Those epithemes apply which were mentioned for cæliac affection. And, in like manner, those liniments to the belly which are composed of astringent and desiccative materials, with some of the glutinous substances, gum, frankincense, taurocolla, fine flour, may have place with the corresponding cataplasms. The food at first should be eggs mixed with milk, and the spoon-meats made from frumentaceous substances, either alone or boiled with milk. And milk itself moderately boiled is an excellent thing. The use of pot-herbs is not necessary; however, we may allow the patients to taste of boiled endive, of succory, of plantain, of cabbage twice boiled, and of the autumnal fruits, such as are astringent, spitting out the fleshy parts, and whatever else will irritate the intestines. When the intemperament is very hot, we must give raw succory, and make the patients drink of cold water. The other drink should be rain-water; and, when the stomach is languid, wine may be taken. Afterwards they may take the drier and more

digestible parts of fowls, and use baths of sweet water. But if the flux is brought on by the use of them, soak a large sponge or pieces of bread made from fine flour in wine of Ascalon, or some of the hot astringents, apply to the whole abdomen, bind it on, and order them to bathe in this state.

COMM. COMMENTARY. Consult Hippocrates (Aphoris., de Affect. Epidem.); Galen (Comment. de Med. sec. loc. ix); Aretæus (Morb. Chron. ii, 9); Celsus (iv, 15); Cælius Aurelianus (Pass. Tard. iv, 6); Alexander (vii, 21 and x, 1); Aëtius (ix, 43); Oribasius (Synops. ix, 14, and Loc. Affect. iv, 88); Actuarius (Meth. Med. i, 41); Nonnus (167); Leo (v, 9); Octavius Horatianus (ii, 31); Marcellus (27); Scribonius Largus (xi); Averrhoes (Collig. iv, 59); Avicenna (iii, 16, 2, 7); Serapion (iii, 26); Avenzoar (ii, 1, 5); Haly Abbas (Theor. ix, 26; Pract. vii, 22); Alsaharavius (Pract. xvii, 1); Rhases (ad Mansor. ix, 72; Divis. 67; Cont. xiii.)

Hippocrates briefly describes dysentery as being a complaint attended with pain throughout the whole belly, tormina, and discharges of bile, phlegm, and blood. The disease, he says, is occasioned by an overflow of phlegm and bile to the veins of the belly, producing erosion and ulceration of the intestines. His treatment consists of purging the head, emetics, opening the belly, emollient clysters, and a regulated diet. In one of his aphorisms he states that a spontaneous vomiting cures dysentery. Another of his aphorisms is that a dysentery commencing from black bile is mortal. Another is, that when substances resembling flesh are discharged by a person affected with dysentery it is a mortal symptom. (iv.) His commentator Theophilus says, in explanation, that it is because the intestines are ulcerated and do not readily heal. (Ed. Dietz, 401.)

Galen treats separately of hepatic dysentery and of dysentery connected with ulceration of the mucous membrane of the intestines. Of his remedies some are astringents, such as galls, alum, dried roses, and hypocistis; some anodyne, such as opium and henbane; some are detergents, such as myrrh, pepper, spikenard, &c.; and some escharotics, such as arsenic, sandarach, the scales of copper, and the like. These last are to be given only in clysters. Modern physicians will be disposed to condemn them without a trial; and yet, as arsenic may be given by the mouth in properly-regulated doses, there appears no good

reason why it may not be safely administered in injections. COMM. Rogerius, one of the earlier modern writers, speaks favorably of trochisks of arsenic. (i, 37.) Sprengel, however, decidedly condemns the practice. He says of Athenæus: "Il recommandait dans la dyssenterie un lavement dont un *mélange affreux* d'orpiment et de realgar formait la base." (Hist. de la Méd.) See Sect. xxix of this Book.

Aretæus gives a very circumstantial description of the symptoms of dysentery, but unfortunately his chapter on the treatment is entirely wanting. He describes all the varieties of ulcers, the superficial, the deep-seated, the irritable, the callous, and the like; and the discharges from them, whether thin, bilious, fetid, devoid of smell, high-seated, or otherwise. Of the other authorities, Alexander may be mentioned as the one who has most correctly pointed out the importance of attending to the part of the intestines in which the ulceration is seated. The large intestines, he says, are most commonly affected. He approves of bleeding in certain cases. His treatment is judiciously regulated according to the exciting causes; and, in many cases, he prescribes gentle laxatives. One of the varieties of dysentery described by him is said to proceed from disorder of the liver, which is impaired in its attractive faculty. This variety he calls hepatic dysentery, which, instead of attempting to cure, as he says many do empirically, by a combination of aloes with astringents, he recommends to be treated according to the nature of the affection and the humour which produces it. His views of the treatment are given at great length.

Celsus gives a very distinct account of the treatment. He enjoins rest, as all motion proves injurious to the ulcers; recommends astringent cataplasms, frequent washing with warm water in which vervain has been boiled, astringent food, injections of ptisan, milk, oil, the decoction of linseed, the yelks of eggs with rose-water, &c. For drink he directs tepid water to be given, either alone or with an austere wine; or, if these things fail, a draught of cold water to stop the discharges from the bowels. When the disease is seated high up, the belly is to be opened.

Aëtius allows the abstraction of a small quantity of blood from the arm when inflammation is present. He says it allays heat, produces revulsion, and induces sleep. His internal remedies are much the same as those of Galen.

COMM. Much of our author's treatment is borrowed from Oribasius.

Octavius Horatianus, like the others, recommends, when the ulcers are attended with putridity, a powder containing arsenic, quicklime, and burnt paper, administered in an astringent wine, or in a decoction of astringent herbs. Marcellus makes mention of a similar application, which he directs to be used only when symptoms of malignity appear.

Cælius Aurelianus gives a very comprehensive description of dysentery, the principal symptoms of which are fever, anxiety, rumbling of the belly, sometimes retention of urine; tongue rough, furred, and black; tenesmus and pungent pains of the intestines and anus. The disease, he says, consists of a defluxion from the belly with ulceration, and is preceded by diarrhœa, cholera, or inflammation. He animadverts upon the treatment of others with his usual freedom. Thus he blames Erasistratus for using nothing but astringents, whereas many cases of dysentery require laxatives. His treatment is minutely detailed, but is not very different from our author's.

Leo, for bloody dysentery, like our author, recommends pills of macer, the troche of corals, and the decoction of rhubarb.

According to Sprengel, Nonnus is the first author who distinguishes the white dysentery from the red. It is obvious, however, that the distinction between the two varieties had been made by earlier authorities. We may add that Actuarius treats of the bloody dysentery very fully.

The Arabians follow closely the treatment of the Greeks. Injections containing arsenic are recommended by Serapion, Avicenna, and Haly Abbas. Rhases, like Aëtius, admits of venesection in certain cases. He refers the disease, in general, to debility of the retentive faculty of the liver and derangement of the bile. Haly treats separately and minutely first of intestinal dysentery and next of hepatic. The intestinal, he says, is occasioned by ulceration of the intestines. He also describes the bloody dysentery, like our author. His treatment is directed upon general principles. He recommends various clysters; and, when the ulcers are in the rectum, he directs us, among other remedies, to introduce a tent, soaked in a solution of arsenic, quicklime, hypocistis, &c. Some of his stimulant applications, however, are merely detergents, and do not contain septics. The ingredients of his ordinary injections are either emollients or astringents,

according to circumstances. The account given by Alsahara- Comm.
vius is valuable, but too long for our limits. Rhases, in cases of protracted dysentery, directs snow to be applied to the belly. In fact most of the ancient authorities recommend cold applications in cases of chronic dysentery.

SECT. XLIII.—ON COLIC AFFECTION.

The colon, being a part of the large intestine, takes its origin in the right iliac region, and passes across to the left, in the form of a belt. The most violent pains arise in it from various causes, either from a thick and pituitous humour shut up between its coats, or from a thick flatus that cannot find a passage out, or from inflammation of the intestine, or from acrid and sharp humours. Those, therefore, who suffer from a thick and pituitous humour, have a deep-seated pain along the whole abdomen, and especially in the region of the colon; there is a sensation as if it were pierced by a wimble; they are troubled with tormina, eructations, nausea, and vomitings of all kinds, but more especially of phlegm. The belly is greatly constipated, so as not to allow the passage even of wind; and any fæces which are discharged seem like the dung of oxen, light and windy. These symptoms are usually preceded by the continued use of food of a cold and incrassating nature, repletion, indigestion, inactivity, and the like. When the attack proceeds from flatulence, there is rather a sense of distension. When it is from inflammation, there is a sense of heat in the part, and no inconsiderable fever, retention of the urine as well as of the fæces, pulsation in the belly, thirst, and troublesome heat, nausea, and vomitings, more especially of bile, which afford no relief. In short, this is the most severe of the colic affections, and threatens to pass into ileus. When acrid and sharp humours are the cause of the pain, the patients, as in the case of inflammation, have heat, thirst, and sleeplessness; if they have fever, it is less than in the former case; their urine is acrid; the alvine discharges bilious; and often along with the discharge from the bowels the pain is aggravated, and exacerbations thereof take place, more especially after heating food or drink. Pains occasioned by cold, viscid, and thick humours are to be cured

by such things as are not violently heating; for by things which are thus heating the humours are dissolved and converted into air. Wherefore we must try to incide and concoct them by carminatives, and such medicines as are attenuant and desiccant, without heating much at the beginning of the complaint. The fæces being evacuated from the bowels by suitable clysters, we must use an injection of oil, in which cumin or rue has been boiled, with the grease of a goose or hen; or of a decoction from the roots of wild cucumber, with a drachm of myrrh and some honey and oil; or from myrrh, honey, and Sicyonian oil. And often, when common oil is injected, the vitreous phlegm is discharged along with it, and instantly removes the pain. If, owing to the violence of the pain, the injection be retained, we must apply a suppository of honey, cumin, nitre, and the dried seeds of rue; or of a stalk of cabbage well shaven down and macerated in salt water; or of the ashes of cabbage mixed with honey; or of colocynth triturated with honey, nitre, and cumin. The suppositories should be six fingers' breadth in length, so that they may extend beyond the sphincter muscle. The anus is to be anointed with the juice of sow-bread, with honey and nitre, or with centaury along with honey and nitre. When the pain is continued, in addition to the aforementioned, these injections are to be used: Of turpentine-rosin, oz. j; or of opopanax, dr. i; or of galbanum, dr. iv; of bitumen, an equal part, with, of nitre, dr. j; and of water, oz. j; of oil of rue, oz. v, or more. Embrocations are to be applied to the affected parts from the oil of cumin, of dill, or Sicyonian oil. Cataplasms are to be applied, composed of the medicine called trispermum with cumin, bay-berries, and parsley-seed. Epithemes are to be applied, namely, that from seeds, that from bay-berries, that from meliot, and the polyarchian. Let the patients sit in a hip-bath of the decoction of fenugreek, marshmallows, chamomile, mugwort, dill, bay, and the like. And they may be made to sit in a hip-bath of warm oil, or in oil and water. They should take potions containing wormwood and cumin, in equal parts, or panacea with water, or of castor, of anise, and of the peppers, dr. j, with oxymel. When the pain does not remit, we must give them a draught, containing the medicine from three peppers, or the theriac; and have recourse to a sinapism and dropax during the remissions, and to the natural baths; but they

must abstain from bathing in drinkable water, unless compelled to have recourse to them by the urgency of the pain; when, having previously injected some of the afore-mentioned medicines, we must direct them to bathe, and be fomented within the heated walls of the bath, having been previously rubbed with some of the detergent ointments containing nitre. When the pain is violent, we must use those things which are moderately soothing, such as the trochisk of castor, either injected or taken by the mouth, and such like remedies. But powerful narcotics must be avoided, which allay the pain indeed for a short time, but render the affection more protracted by incrassating the offending matter, and occasioning obstruction of the pores of the intestine. When the phlegm is attenuated, we must purge them with hiera picra, or such pills as these: Of aloes, of euphorbium, of pure granum cnidium, of scammony, equal parts. The dose is two scruples. A heating and desiccant diet will suit with them. At first, indeed, they should abstain from food, but afterwards take acrid food. Wherefore we must give them leeks boiled with prepared wine and parsley, and marsh asparagus, raw garlic, more especially if they do not dislike these things; and they may drink of the prepared wine, and take some bread with it. Afterwards we must give them wholesome and digestible food, avoiding a surfeit and indigestion. If it is a flatulent spirit which causes the pain, after carminative injections and draughts, dry-cupping by means of large cupping-instruments, heated and fixed along the whole abdomen, often effects a cure. When the intestine is in a state of inflammation, we must bleed from the arm; but if dysuria prevails, we must likewise open the vein in the ankle, and use the remedies already mentioned, except those things which are acrid and powerfully cathartic; and we must rather use soothing injections, cataplasms, fomentations, placing the patient in a hip-bath of oil. We may also apply cupping-instruments to them, and lay a cerate upon the abdomen, containing, of wax, oz. v; of chamomile, oz. ij; of rose-oil, oz. ij; of the flour of beans, oz. ss; five yelks of eggs pounded with the juice of linseed. The diet should be light, and such as that applicable in fever, until the inflammation be resolved. But if the pain arise from acrid and sharp humours, we must administer injections of oil, in which has been boiled fenugreek or marshmallows, with plain

fresh grease of a goose or hen, or the juice of ptisan with rose-oil, or the juice of linseed. They must take the antidote called picra from aloes in a draught, and use baths of sweet waters, and spoon-meats from chondrus or ptisan, and fishes caught among rocks; and, in a word, the whole regimen should be moistening and cooling. The patient must abstain from all acrid food and medicines, and from hot fomentations, by means of embrocations and cataplasms, and from drinking wine, more especially old. When the pain is strong, we may also use narcotics; for they prove less injurious in this case than in any of the others, incrassating and moderately cooling the thin and sharp humours. I am of opinion that the colic affection which now prevails is occasioned by such humours; the disease having taken its rise in the country of Italy, but raging also in many other regions of the Roman empire, like a pestilential contagion, which in many cases terminates in epilepsy, but in others in paralysis of the extremities, while the sensibility of them is preserved, and sometimes both these affections attacking together. And of those who fell into epilepsy the greater number died; but of the paralytics the most recovered, as their complaint proved a critical metastasis of the cause of the disorder. Those, therefore, who were thus affected, a certain physician in Italy cured, in an incredible way, by putting them boldly upon a refrigerant diet. For he gave them unboiled lettuces previously cooled, and succory, in like manner, to eat until they were more than sated; and also grapes, apples, fish which have hard flesh, and, in short, all the crustacea; also the feet of oxen, the bulbi, and the like, namely, things which were not only cold by their powers, but likewise to the touch. He seldom gave wine, and when he did, he mixed it with cold water. And he gave cold water for drink, or cold oxycrate, and prohibited all warm food and that of the middle kind; and, contrary to all expectation, he cured most people in this way, and even some who had begun to experience a conversion of the disease into epilepsy or paralysis.

COMM. COMMENTARY. See Hippocrates (de Affect. xv); Galen (de Med. sec. loc. ix; de Loc. Affect. vi, 2); Aretæus (Morb. Acut. ii, 6; Chron. ii, 8); Alexander (ix, 1); Celsus (iv, 14); Oribasius (Loc. Affect. Curat. iv, 87); Leo (v, 13); Aëtius (ix, 29);

Actuarius (Meth. Med. i, 45); Pliny (H. N. ix, 37); Nonnus (170); Scribonius Largus; Cælius Aurelianus (Tard. Pass. iv, 7); Marcellus (de Med. 29); Serapion (iii, 32); Avicenna (iii, 16, 4); Avenzoar (ii, 1); Haly Abbas (Pract. vii, 28); Alsaharavius (Pract. xvii, 2, 12); Rhases (Divis. 69; Contin. xxi.) Comm.

Hippocrates treats very sensibly of the colic pains which occur in summer, recommending for them emetics of tepid mulse and vinegar, warm clysters, the warm bath, fomentations, soporifics, and purgatives, according to circumstances. When the pains are seated in the lower part of the belly, he merely gives clysters and laxatives.

Galen gives a long list of preparations for colic. They consist principally of narcotics, such as opium, henbane, and mandragora, along with carminatives and aromatics, as anise, pepper, valerian, cinnamon, saffron, gentian, and the like.

Aretæus concludes his chapter on ileus with a short account of colic. He remarks that the colon being a larger and more fleshy intestine than the ileum, the pain is less acute, and the complaint in so far less dangerous. The pain, he says, sometimes extends to the side, resembling pleurisy; sometimes to the false ribs, resembling hepatitis or splenitis; and sometimes to the os sacrum, tops of the thighs, and testicles. The complaint is attended with unavailing vomiting; and what is vomited is thin, bilious, and oily. He also describes a more protracted species of colic among the chronic diseases. Among the symptoms he enumerates torpor, loathing of food, watchfulness, and swelling of the face. He says the pain sometimes shoots down to the testicles, whereby ignorant surgeons have been led into the mistake of supposing that the disease was seated there, and have made an incision into the cremasters. Does he allude to the operation for strangulated hernia? or does he mean to say that the disease is confounded with inflammation of the testicle? His treatment of ileus will be given in the next Section.

Alexander insists strongly on the absolute necessity of distinguishing colic from the diseases of the adjoining parts, which, he remarks, is sometimes difficult. He first treats of colic pain arising from a cold humour, and discusses fully the remedies for it. They are nearly such as our author recommends, namely, attenuant food, including white wines in cases of flatulence; avoiding the common bath, which does no good, but using the

COMM. sulphureous bath if convenient; rubbing the affected parts with calefacient ointments, or applying heated bricks to them; purging with aloes, scammony, and the like; using the hip-bath made with the decoctions of parsley and anise, common oil, and the like; applying epithemes; administering clysters of hot oil, either alone or with some carminative, such as turpentine; giving narcotics, as opium and henbane, when the humours are thin and acrid, but not otherwise; applying sinapisms and calefacient plasters; sometimes giving emetics; and in protracted cases enjoining exercise. When the disease proceeds from flatulence, he applies dry fomentations of millet, calefacient oils, and a cupping-instrument to the belly. When it is occasioned by constipation, he directs us to remove the obstruction by giving water, oil, and mead, and administering the same in clysters. In obstinate cases he directs us to inflate the bowels with a bellows, and afterwards to inject a little nitre and oil and water. He also speaks of pills or pellets of lead. When it proceeds from hot and bilious humours, he gives for food fish, the testacea, the most indigestible parts of quadrupeds; and recommends the common bath, and purging with drastic cathartics, such as hellebore and scammony. When inflammation is the cause, he forbids purgatives, because they only increase the evil, but recommends general bleeding repeated at intervals; and, if the urine is suppressed, bleeding at the ankles; also emollient clysters, external applications of a soothing nature, and baths after venesection, but not before.

Celsus recommends principally dry fomentations, friction of the extremities, and dry cupping. He also mentions a medicine called the colic composition, consisting of poppy tears, pepper, anise, castor, spikenard, myrrh, &c.

The beginning of Cælius Aurelianus's chapter on colic is unfortunately lost. He approves of venesection, fomentations of sweet oil, and injections of the same; but disapproves of adding rue, anise, or anything calefacient to them; speaks favorably of cupping and leeching, which are to be followed by hot fomentations with sponges squeezed out of warm water, or by the hip-bath. As to the calefacient and acrid things usually given, namely, parsley, cumin, and the like, he properly directs them to be avoided when inflammation is present. In this case he recommends the bath of oil. When the complaint is on the decline,

he approves of gestation, of friction of the belly with rubefacients; and of sinapisms, calefacient plasters, and the like. He speaks favorably of a long sea-voyage, and of the use of medicinal springs, especially sulphureous, and directs indigestion and everything of a flatulent nature to be guarded against. COMM.

Several of the other Greek and Latin authorities, especially Aëtius, treat of colic with admirable precision; but, as their remedial measures are much the same as those already mentioned, we shall not attempt to give any account of them.

Serapion's divisions and treatment are nearly the same as our author's. Avicenna, however, treats of the complaint more fully and circumstantially than any other ancient author, but the length of his description prevents us from giving an abstract of it. We may mention, however, that when the pain is violent he approves of narcotics both by the mouth and in clysters. Among the causes of colic mentioned by Haly Abbas is debility of the intestine, so that it can neither digest the food nor evacuate it. Haly justly remarks that the inflammatory colic is the worst species of the disease, for that in it the patient experiences no relief from evacuations, and the danger is imminent. With regard to the treatment of it, he forbids purgatives, which do but increase the irritation; and recommends bleeding, emollient drinks, plasters, &c. In flatulent colic his remedies are purgatives and carminatives, such as hiera with anise, fenugreek, cucumber, mastich, &c. In all cases he approves much of clysters. Alsaharavius enumerates the following causes of colic: A hot intemperament, hernia, indurated fæces, cold humours impacted in the intestines, and the presence of some poisonous medicine. We dare scarcely venture upon an exposition of the minutiæ of his treatment. When the disease is occasioned by retention of hard fæces, he recommends oily injections, baths, and diluent draughts. When it arises from gross humours, he agrees with Galen in approving of strong wine, clysters of dill, chamomile, fenugreek, and the like, boiled in water. Rhases directs us to give emetics when the disease arises from indigestion. He probably alludes to duodenal disease. He mentions alvine calculi and worms among the causes of colic. He particularly recommends the warm bath and clysters.

Our author's interesting account of the epidemical colic is copied by Avicenna; but neither he nor any other subsequent

COMM. authority supplies the smallest additional information. Pliny seems to allude to an epidemical colic which prevailed in the reign of Tiberius, but gives no satisfactory account of it. (H.N. xxvi, 6.) The Jewish physician Moyses Alatinus gives the following description of a pestilential colic resembling that described by Paulus and Avicenna: "Colicam, iliacamque, hujus generis, *contagiosas passiones*, quas hoc in loco refert Avicenna, memini me olim vidisse in civitate Mantuæ anno 1560, mensibus nimirum Augusti et Septembris, quia publicè tunc temporis ejusmodi passiones contagiosæ per universam civitatem grassabantur, cum sævis symptomatibus, assiduo nempe, ac urgente vomitu bilis porraceæ in magna copia, nec non etiam æruginosæ, lipothymia, assiduâ febre malignitatis non experte, ac siti immensâ, ac in eâdem familiâ plurimi eo morbo oppressi inveniebantur," &c. (Marciæ Prælect. 276.) See Book Second, Sect. XXXVI.

SECT. XLIV.—ON ILEUS.

Iliac passion, being a very acute and painful complaint, has a symptom more grievous even than dangerous; for those who are overpowered by the disease die a most piteous death, vomiting up fæces at last by the mouth. The affection arises from indigestion and obstruction, when the corrupted matters are retained, and from deleterious medicines, and from a falling down of the bowels into the scrotum, and from inflammation of the intestines, commonly supervening upon a colic affection. Wherefore children are to be cured by embrocations, cataplasms, clysters, suppositories, and fomentations, as described when treating of colic. But young persons and adults are to be bled without delay, and the operation repeated; and dry cupping is to be freely applied along the abdomen, and cupping even with scarifications to the affected parts. The extremities are to be rubbed and ligatures applied round them; and we must have recourse to the most drastic clysters and enemata, putting the patients into hip-baths of hot oil, giving antidotes, and purgatives; and simply all things, in short, which are applicable for colics, except when the affection of the colon proceeds from acrid and pungent humours. It has a wonderful effect in this complaint to drink the decoction of dill, even if it should be vomited

up; but after drinking it, dip bread in warm water, and give the hot pieces of it to eat. For those who cannot retain their food, triturate sumach and cumin together, and give to drink in oxymel to the amount of six cupfuls. Those who are attacked with ileus from taking deleterious substances are to be compelled to vomit by drinking warm water (the symptoms arising from taking any of the deleterious substances are detailed in the Fifth Book); and then they are to be made to drink warm oil, or fat soups, that they may again vomit; but, after a certain number of days, they must drink the theriac. If the constipation continue, the belly is to be evacuated by curds and whey (*schiston*), with a little scammony, aloes, or some other purgative. If the complaint arise from the falling down of the intestine into the scrotum, we must put the patient into a reclining position with his feet elevated, and then we are to press the prolapsed intestine up to the groin, and retain it with a bandage.

COMMENTARY. Consult the authors referred to in the preceding Section. COMM.

Among other remedies for ileus, Hippocrates recommends inflating the bowels by means of a bellows. (De Morb. iii, 15.)

Aretæus gives an excellent account of the disease, the causes of which, as enumerated by him, are protracted indigestion of multifarious and unwonted food, a blow, exposure to cold, cold drink, and prolapsus of the intestine into the scrotum, or intestinal hernia. Some, he says, die from the violence of the pain, some from the conversion of the disease into suppuration, and some from blackening and mortification of the bowels. The symptoms are most accurately described. There is at first vomiting of phlegm and bile, but latterly of fæces; the pulse at first is rare and small, but before death it becomes very small, very dense, and intermittent. When inflammation is the cause of the disease, he approves of immediate venesection, so as to induce deliquium animi, which, he says, will, at all events, bring some respite to the patient's sufferings. If inflammation is not present, venesection may be omitted, and an emetic of oil and water may be given; and afterwards applications are to be used for promoting the discharge of flatus, consisting of sow-bread, nitre, salts, and turpentine, which last medicine is also to be administered in a clyster with oil, honey, hyssop, and colocynth; and

COMM. afterwards another injection of hot oil and rue is to be given. Externally he applies various fomentations and dry cupping. He gives carminatives with anodynes and the theriac. When the bowels cannot be got opened otherwise, he recommends the purgative hiera. The food is to consist of soups made from domestic fowls, with cumin, nitre, &c.; and, when there is no fever, he permits the use of hot wine.

Celsus forbids wine, but his treatment otherwise is like that of Aretæus. He directs immediate venesection and cupping; and, if the pain be seated above the navel, he approves of emetics, but, if below, he agrees with Erasistratus in preferring purgatives, such as ptisan, with oil and honey. He directs us to apply cataplasms from the breast to the loins, to put the patient into a bath of oil, to inject hot oil per anum, and to use friction of the extremities.

Our author follows Aëtius and Oribasius closely, who, in their turn, are indebted to Galen.

Nonnus seems merely to abridge our author. The causes of ileus are said by him to be obstruction of the bowels, inflammation, indigestion, and colic affections. His remedies for children are embrocations, cataplasms, and fomentations; and for adults, also venesection, cupping, clysters, and the oily bath. When the food is rejected, he recommends sumach and cumin in oxymel, and also purgatives.

It appears from Cælius Aurelianus that Diocles had been in the practice of giving a leaden bullet to swallow in this disease, no doubt with the same intention that quicksilver is now sometimes administered. In the preceding Section, we have mentioned that Alexander gave pills of lead for colic. Cælius, however, disapproves of this practice. He finds fault with Hippocrates for recommending to inflate the bowels with smoke; for giving emetics; and for cooling the upper parts of the body. He himself approves of bleeding, oily clysters, baths of oil, and the like.

The Arabians, like the Greeks, treat ileus by venesection, clysters, and so forth. They mention cooling plasters as an external application; but we believe it was the practice of the ancients rather to use hot fomentations than cold in this disease. Haly Abbas in general approves of venesection, but, in certain cases arising from a cold cause, he joins Hippocrates in permit-

ting the use of wine. When the disease is occasioned by obstruction, he recommends laxatives; when connected with descent of the gut, he directs us to return it, but says nothing of the operation for strangulated hernia. According to Rhases, the causes of ileus are inflammation of the bowels, debility of the expulsive faculty, and indurated fæces. COMM.

Vegetius, the veterinary surgeon, gives an excellent account of the symptoms and treatment of colic and ileus in cattle. (Mulomedicina, i, 41, 42.)

SECT. XLV.—ON AFFECTIONS OF THE KIDNEYS AND BLADDER; AND, FIRST, ON CALCULUS.

The alliance of these diseases obliges us to break through the order of instruction; for it is a common symptom of colic and of calculus in the kidney, that the belly is at first constipated, with violent pain, anorexia, indigestion, and tormina. But it is peculiar to colic affections to have all these symptoms more intense, whereas in nephritic they are less so; and in colics the pain is rather in the right loin, and ascends to the stomach, liver, and spleen; and the passage of the fæces is completely obstructed, so that not even flatus can pass; or, when with difficulty the fæces are evacuated, they are flatulent, and resemble the dung of oxen, or sometimes a vitreous phlegm is discharged, and the urine is voided freely, and is of a pituitous nature: whereas, in nephritic cases, there is a severe fixed pain in the kidneys, as if transfixed with a sharp-pointed instrument, and the corresponding testicle is pained, and there is torpor in the thigh of the same side. They also have sometimes, though rarely, spontaneous evacuations of the belly; but clysters always bring away flatus and bilious fæces; the urine is in small quantity and sandy, and the urinary passage is contracted. These are the symptoms of stones in the kidneys, which occur most frequently in adults, but the stones in the bladder form rather in boys. The symptoms of these are, unconcocted and whitish urine, with a sandy sediment; the patients rub constantly and handle the member, stretch it, and make incessant attempts to pass water, and are troubled with strangury. Wherefore the material cause of the formation of stones is a thick and terrene

humour, but the efficient is a fiery heat of the kidneys or bladder. But with regard to the kidneys, we must use lithontriptics of a cutting nature, without being decidedly heating: such are the roots of the royal asparagus and of the bramble, burnt glass, the root of couch-grass, maiden-hair, bdellium, the rind of the root of the bay, the seeds of marshmallows, the black chick-pea, the stones of sponges, vinegar of squills, and valerian, spignel, asarabacca, carpesia, saxifrage, water-parsnip, when eaten or drank, the golden-thistle (*scolymus*), hedge-mustard, and prionitis. Let them use baths constantly; and after the bath take some of the afore-mentioned things; and have recourse to embrocations, cataplasms, fomentations, hip-baths of a soothing nature; in short, applying the remedies for colics. The following are compound draughts: Boil the roots of wild rue, wild mallows, and parsley, with wine; mix the expressed juice with water, and give to the amount of two cyathi. And this is a powder: Of the fruit of balsam, of the stone in sponges, of dried pennyroyal, of the seeds of wild mallows, equal parts. Give a spoonful with two cupfuls of diluted wine. Also, dried goat's blood, dried cicadæ without the wings and feet, the Jew's stone, in oxymel. Let these things be given in the warm bath, and the compound medicines prepared from them, the nephritic sour wine (*posca*), and the wines prepared for this intention. And the troglodytes (*wren?*) is a much-commended remedy. It is of all the sparrow tribe the least, except that called the regulus; for it is a little larger than this one alone, and resembles it in colour, which is intermediate between that of ashes and green. It has a slender bill, and lives mostly in walls and hedges. When, therefore, this bird is pickled whole, and frequently eaten in a raw state, it makes the stones which are already formed be passed with the urine, and prevents them from being formed again; and if it be burnt alive entire with its wings, and if the ashes by itself and along with pepper and a moderate quantity of Indian leaf, be drunk out of mulse, it will do the same thing. To relieve the acuteness of the pains and the want of sleep, the medicine called Sotira and that of Philo, are excellent remedies; and frequent venesection, if had recourse to, alleviates the pain, and produces a speedy discharge of the stone. The preservatives from the formation of stones are, first, wholesome and moderate food, exercise, abstinence

from the frequent use of all kinds of pulse and food of grain, cheese, milk, and condiments prepared from dark-coloured wine, much flesh, and simply all things which contain thick juices; also from those things which are very hot and acrid, I mean hydrogarum, prepared wines, and the like. And the following things not only prevent stones from forming, but also break down or produce the discharge of those which are already formed. Let them drink oxymel with some of the simpler diuretics, the decoction of maiden-hair, parsley, and couch-grass; and, after the bath, let them drink tepid water before taking food or drinking wine; and in the midst of dinner, let them drink cold water if nothing prevent it. If they feel a collection of vitiated humours, let them evacuate by bleeding or purging. But the most effectual of all remedies is to drink water of a middling temperature after the bath, and before taking food or wine. The stones which form in the bladders of young persons you may destroy by the more powerful remedies, making choice from among the above mentioned. But when the stone gets too large, or becomes impacted at the neck of the bladder, we must have recourse to concussion, catheterism, or even lithotomy, as will be described in the Surgical part of the work.

On inflammation. If there be inflammation of the kidneys or bladder, it is to be recognized by the heat in the place, attended with heaviness and pain, fever, delirium, vomiting of pure bile, and inability to make water, more especially if the bladder is inflamed. Wherefore we must have recourse immediately to venesection, and use soothing fomentations and cataplasms from rue, dill, fenugreek, and the root of marshmallows; also emollient clysters and injections consisting of oil, poppies, and the grease of geese; and when the bladder is affected, we may push up the anus half an obolus of opium with myrrh, saffron, and oil. They may take a sweet draught of honied water, but must abstain from the strong diuretics and much drink, unless an acrid and bilious humour prevail, when they must take copious draughts, and plenty of the non-stimulant diuretics. Let them take in water a spoonful of a mixture consisting of two parts of linseed, and one of starch; and likewise let them take the seeds of cucumber and pompion. If there is a sensation of great heat about the kidneys, apply to these parts rags out of wine and

rose-oil, water and rose-oil, or oil of apples; or a cerate composed of wax, rose-oil, oil of chamomile; or oil of apples, and the yelks of eggs, with a little vinegar, or the juice of knot-grass. Afterwards they may use the diachylon plaster with oil of chamomile; but must abstain from very hot applications, lest they occasion suppuration; and from very cold, for thereby the kidneys will readily become scirrhous. During the violence of the inflammation they must abstain from baths, and use the regimen called the febrile and anti-inflammatory.

On abscess and ulceration of the urinary organs. Pains in the loins, anomalous rigours, and irregular fevers indicate an aposteme in the kidneys; but when it is in the bladder, it is marked by pain in that part in addition to the symptoms we have now mentioned. You may ascertain which kidney is affected from this, that when the person lies upon the sound side he has pain in the opposite one, from the diseased kidney being suspended. In these cases we must place the patients in hip-baths of oil and water, apply cataplasms of fine flour, oil, and rosin, or the flour of tares with honey, or cardamom, or pigeon's dung with dried figs. Pus freely discharged in the urine indicates a rupture of the abscess and ulceration in the part. But since the urinary organs are ulcerated without an aposteme, from the rupture of a vessel, erosion by acrid matter, or the irritation of a stone, we may distinguish ulceration in the kidneys from that in the bladder or urethra in this way: When the kidneys are ulcerated, the patient experiences a heavy pain in the loins, he makes water freely, and pus is found mixed with the urine, and particles of flesh floating in it. When the bladder is in a state of ulceration, the patient has violent pain in the region of the pubes and hypogastrium, and difficulty of making water; the pus, after the urine is voided, sinks to the bottom, and fetid scales, or else foliaceous ones float in it. Furfuraceous sediments indicate scabies of the bladder. When the ureters are ulcerated, the mixture of the pus is in an intermediate degree, and rather resembles hairs floating in the urine; and the situation of the pain is intermediate between the kidneys and bladder. If blood or pus be discharged without any evacuation of urine, it is to be understood that none of the afore-mentioned parts are ulcerated, but the member itself. Wherefore to those who have ulceration of the urinary organs we must give the sweet draughts of honied

water, or of the decoction of fenugreek with honey, or from the seeds of cucumber with must. To those who void pus in their urine we are to give Armenian bole, or the ashes of burnt reeds, as much as can be taken up with three fingers, in must; and drinking milk is an excellent remedy for them. The following are compound remedies: Of linseed, of the seed of cucumber, of tragacanth, of each, dr. ij; form trochisks.—*Another:* Twenty pine-nuts; forty seeds of the garden cucumber; of starch, dr. j; add to two heminæ of the decoction of nard and parsley seed. But Archigenes, in his epistle to Atticus, says that "when the dysuria is urgent, we should take of the powdered seed of toasted poppy, dr. j, which is to be sprinkled upon the decoction of bog-rush, sweet-rush, or liquorice. This medicine removes the pains from ulceration: Of the seeds of purified cucumber, xxx in number; pine-nuts, xij in number; bitter almonds, whitened, xxxv in number; of saffron, what is sufficient to give it colour; give to the patient with an empty stomach every day, along with the wine *protropum*, or milk. It will be milder, if, instead of the pine-nuts, it receive an equal quantity of the seeds of mallows. The cyphi and the cyphoid antidotes are also said to cure ulcerations in the bladder. I, in the more protracted cases, by using this medicine, have not stood in need of more complex remedies: Of wall-germander, of ground pine, of each, dr. xxiv; of asarabacca, of white pepper, of each, dr. vij; of cinnamon, dr. j. Of this medicine, finely powdered, I give two spoonfuls in Cretan sweet wine; but if there is fever, in three cyathi of water; but when the ulceration is attended with pain, by adding two cyathi of starch, and fifteen seeds of cucumber, I accomplish my purpose." These things are from the works of Archigenes. And the remedies formed from alkekengi, the antidote from the seed of wild mallows, and that from sweetmeats are excellent. We may apply to the perinæum and lower belly cerates made from washed hyssop and butter, and the grease of geese, and storax; and we may inject into the bladder, by means of a small syringe, honied water much diluted, or milk with some honey, or with cucumber seed, or the white of an egg with pompholyx, or some of the remedies formerly mentioned. When the ulcer is spreading, the trochisk from paper must be injected, or the Bithynian; and cataplasms are to be applied, made from dates, dried grapes, with galls, accacia, hypocistis, and alum.

On hemorrhage of the kidneys. The kidneys often getting into a relaxed state, cannot retain the urine, but, becoming dilated, they allow the blood and other thick matters to escape from the veins. The kidneys often discharge blood periodically like hemorrhoids; and when evacuated they are relieved, in which cases we must not rashly interfere, if the bleeding immediately stops; but, if it continue, we must bleed in the arm, and use for hemorrhage of the kidneys and bladder those remedies which are recommended for hemoptysis and other hemorrhages; and, more especially, we must give the root of comfrey and tragacanth macerated in wine, the juice of knotgrass and plantain with oxycrate, or bitter almonds with must; or this medicine: Of fissile alum, dr. j; of tragacanth, dr. ij; of gum, oboli, v; with must. And we must apply a cataplasm of raw barley-meal with oxycrate or rose-oil, or that from dates, and bread of siligo with acacia, or hypocistis boiled in an astringent wine or oxycrate. In hemorrhages from the bladder, we must apply cupping instruments to the loins and ischium; and we must ascertain the part from which the blood flows by the pain in the place, and whether the blood be mixed with the urine or no, as was said with regard to pus. If there be coagulated blood in the bladder (which you may know from the flow of urine being suddenly stopped after a discharge of bloody urine, and from certain clots or bloody fluids being probably passed), give the decoction of mugwort to drink, and the seed of shrubby-everlasting, of fleabane, or of radish, or the juice of laserwort, or the Cyrenaic juice, or the juice of parsley, each mixed with vinegar, or the rennet of a hare, or of a hind, or of a kid, in oxymel, or strained lye with oil, and externally sponges out of hot salt water, or strained lye, must be applied. But, if they are not dissolved, we must make an incision in the perineum, as in the cases of calculus; and having removed the clots of blood, accomplish the cure in a proper manner.

On hardness of the kidneys. When hardness occurs in the kidneys, it does not occasion pains, but they seem, as it were, to hang from the loins, and the haunches are torpid, and the limbs lose their strength, little urine is passed, and the whole habit resembles that of dropsical persons. Wherefore they are to be softened by cerates, emollient ointments, friction and fomentations; and we must administer diuretics, and clear out the bowels by clysters.

On diabetes. Diabetes is a rapid passage of the drink out of the body, liquids being voided by urine as they were drank; and hence it is attended with immoderate thirst; and therefore the affection has been called dipsacus, being occasioned by a weakness of the retentive faculty of the kidneys, while the attractive is increased in strength, and deprives the whole body of its moisture by its immoderate heat. Wherefore with this intention we will give more food, and that of difficult digestion and not humid, such as alica with rose-wine, or rhodomel, or hydromel, or some wine that is not old, or some of the hot wines. We must give of pot-herbs, succory, endive, and lettuces; of fishes, those that abide among rocks; the feet and womb of swine; pears, apples, and pomegranates; and give cold water to drink. They must get to drink propomata, from the juice of knotgrass, and elicampane, in dark-coloured wine, and from the decoction of dates and myrtles. We must apply a cataplasm to the hypochondrium and kidneys of polenta, in vinegar and rose-oil; and of the leaves of the vine and navelwort, pellitory of the wall, and purslain. We must promote sweats, and excite vomiting by drinking cold water; and make them abstain from all sorts of diuretics. There will be nothing improper in letting blood at the commencement.

On strangury and dysuria. When neither inflammation, nor a stone, nor any of the afore-mentioned complaints are present, if there is acrimony in the urine, and if the whole habit or the other symptoms indicate bile, the dysuria or strangury is formed by it, and we are to use medicines for altering and diluting it; the juice of ptisan, fishes, baths, and a corresponding diet; avoiding acrid things, wine, baths, anger, and long abstinence from food. If the thinness and whiteness of the urine, and the other symptoms indicate a cold intemperament, hot wine and prepared wines will be proper; also diuretic food and medicines, and hot hip-baths. When, in conjunction with the whiteness, the urine appears thicker than natural, we are to suspect a pituitous humour obstructing the neck of the bladder, and must use oxymel, and the compositions from hyssop and pennyroyal, or marjoram, or thyme, or laserwort, boiled in honied water, and the hotter embrocations. But, if a thick humour, a stone, a thrombus, or some such obstruction stop up the passage of the urine, we must apply the catheter to them, unless inflammation

of the part be present. Dysuria in fevers is to be cured by an embrocation with oil of rue, of dill, or old oil. When the bowels are constipated, a decoction of fenugreek or mallows is to be injected, and the patient made to sit in oil and water, or in some of the afore-mentioned decoctions, with oil. And this cerate will be proper for them: The roots of wild mallows are to be boiled in Sicyonian oil, with a little water, until they are dried, and they are to be thrown away; and with the oil is to be mixed of the juice of rue a fourth part, and of wax and castor a sufficient quantity.

On paralysis of the bladder. This complaint, which is sometimes accompanied with dysuria, and sometimes with an involuntary discharge of water, has been formerly treated of under the head of Paralysis.

On incontinence of urine. Relaxation of the muscle at the neck of the bladder occasions this affection, and therefore it happens most frequently to children. Our general treatment ought to consist especially of tonics, such as hot wine and oil, and the like, abstaining from all things which are powerfully refrigerant, and rather as much as possible using calefacients; for cold produces a resemblance to paralysis. The following things are naturally efficacious: Burn the crop of a cock, and give to the patient to drink in tepid water, when fasting, or the flowers of the white ox-eye (*chrysanthemum*) in like manner; or, shave down the testicle of a hare into fragrant wine, and give to drink; or, give calamint and myrrh in a draught before supper; or, give the toasted seed of the wild rue to drink every third day. Let the privy member be anointed with Cimolian earth, mixed with the juice of perdicias (*pellitory of the wall?*)

COMM. COMMENTARY. On these diseases consult Hippocrates (Aphor. iv, 76; de Morb. Intern. 15, et alibi); Galen (de Med. sec. loc. x; de Affect. Renum; de Loc. Affect.; Isagoge); Celsus (iv, 10); Aretæus (Morb. Acut. ii, 9; Morb. Acut. Curat. ii, 8); Ruffus Ephesius (de Vesicæ Renumque Affectibus); Alexander (viii, 4); Aëtius (xi); Oribasius (de Loc. Affect. Curat. iv, 101); Actuarius (Meth. Med. iv, 8); Pseudo-Dioscor. (Euporist. ii, 112); Nonnus (173); Cælius Aurelianus (Morb. Chron. v, 4); Scribonius Largus (38); Marcellus (de Med. 24); Avicenna (iii, 19, 1); Avenzoar (ii, 2); Serapion (iv); Haly Abbas (Theor. ix,

34; Pract. vii, 12); Alsaharavius (Pract. xx); Rhases (Div. 70, and Contin. xxiii.) COMM.

Hippocrates describes four affections of the kidneys, beginning with calculus. According to his theory, stones are formed from phlegm which has been converted into sand. See his theory fully explained (de Morbis, iv, 28, and de Aer. &c. 53.) He states distinctly that the formation of stones is the product of a preternatural heat in the bladder, with a thick and turbid state of the urine. (l. c.) He recommends fomentations with the juice of scammony, purging the whole body, tepid baths, and the like. He intimates, however, that when a stone is fairly formed, the only hopes of recovery are founded upon the operation. It appears that in his days lithotomy was a separate branch of the profession; for in his *Oath* he inhibits his pupils from performing the operation, and binds them to leave it to those who make it their practice. Doubts, however, are entertained of the genuineness of this piece. He mentions that hairs are sometimes passed in the urine; and the same fact is attested by Galen (Loc. Affect. vi, 3), Cælius Aurelianus, Aëtius, Avicenna, and Alsaharavius, among the ancients, and by recent writers on pathology. Actuarius calls them substances resembling hairs, of a handbreadth or thereabout in length. (De Urinis, i, 16.) He held them to be connected with disease of the kidneys. (Ibid. iv, 20.)

Galen says that all lithontriptics are of a cutting and detergent nature, the most of them being bitters. He makes mention of pepper, galbanum, ammoniac, aphronitrum, asarabacca, spignel, St. John's wort, &c. He does not hesitate, however, to declare it as his opinion that the only certain remedy for calculus is lithotomy. (Art. Med. 94.)

Aretæus gives an interesting account of the affections of the kidneys and bladder. His remedies are similar to those of our author. For stones in the bladder he recommends, among other things, some quicklime with honied water, and diuretics. When a stone obstructs the passage, he directs us to push it back, or cut the neck of the bladder. He states that navigation and living at sea are beneficial in all affections of the kidneys. We may mention that this accords well with the late statistics of calculous diseases.

Alexander, like our author, ascribes the formation of stones

COMM. to viscid and thick humours which have been much heated or roasted. He says, in the language of the Peripatetic philosophy, that the material cause of calculus is a thick matter, but the efficient a fiery heat, in like manner as by heat and a suitable matter of such a nature tiles are formed which are insoluble in water. This theory is explained with great logical parade in the 'Isagoge' generally ascribed to Galen, but which Albertus Fabricius supposes to be a work of Demetrius Pepagomenos. Alexander's remedies are mostly the same as our author's. He speaks with surprising confidence of the efficacy of goats' blood; and, by the way, there is no lithontriptic which, both in ancient and in modern times, has been so generally cried up as it. His general treatment, which consists of bleeding, baths, emollient and paregoric medicines, is very proper. He remarks that certain lithontriptics, if given unseasonably, increase the disposition to calculus. Like our author, he forbids thick food, and attributes the best effects to drinking water.

Those who wish to see a full exposition of the ancient views on this subject may consult Aëtius. Like all the others, he says that milk, with the exception of that of asses, contributes to the formation of stones. He also recommends goats' blood. He gives very proper directions respecting the regimen after extraction of the stone, to prevent a recurrence of the complaint.

Cælius Aurelianus makes no mention of lithontriptics, but he describes very properly the treatment when pain and inflammation of the bladder supervene. It is altogether emollient and relaxant.

The nature and treatment of calculous diseases are treated of in a very practical manner by Palladius in his Commentary on the sixth 'Epidem. Hippocrat.' He depends principally upon a restricted diet and light food.

The Arabians treat of calculi at great length, but have the same ideas of the formation of them, and recommend the same remedies as the Greeks. We remark that Avicenna, Rhases, Serapion, and Alsaharavius mention among their lithontriptics *barauch*, or the *nitrum* of the Greeks and Romans, which was most probably an impure carbonate of soda. We need scarcely say that this alkali is now given upon chemical principles. Like our author, they make mention of glass as a lithontriptic. Rhases, Avicenna, and some of the others remark, and perhaps

justly, that white urine is one of the earliest symptoms of calculus. For stone in the bladder Avenzoar recommends cubebs. Avicenna, Serapion, and Alsaharavius join the Greeks in commending the small sparrow (or, as some suppose it, the wren) as an efficacious remedy for calculus. It is said in the 'Isagoge' that its lithontriptic powers were discovered by dreams. We may mention that it has been ingeniously supposed that allusion is here made to magnetic somnambulism, which, it is maintained, was one of the remedial means practised in the ancient temples of health. Haly Abbas ascribes the formation of stones to the concurrence of a viscid humour with heat of the part. Old men, he says, are most subject to renal calculi; for in them the watery part of the urine passes down to the bladder, while the grosser part or sediment is detained in the kidneys, and is converted into stones. Children are said to be most liable to calculi in the bladder, owing to their eating much gross food, and taking exercise after meals, by which means the system is loaded with gross impurities. With regard to the treatment, he enjoins restricted diet, abstinence from gross food, and the use of medicines of an incisive and attenuant nature. The general treatment during a fit of gravel is well laid down by Alsaharavius, consisting of bleeding, cupping, the tepid bath, emollient clysters, &c. Rhases, upon the authority of Antyllus, states that stones are formed either from drinking turbid water or from imperfect digestion, whence the urine deposits a sediment, which is converted into a stony hardness by the heat of the part. COMM.

According to Theophilus, a thick and milky state of the urine is characteristic of calculous diathesis. (De Urin. 8.)

Vegetius mentions that cattle, especially young ones, are liable to stones in the bladder, which are apt to fall into the urethra and obstruct the urine. He states correctly that a stone will sometimes make its way into the rectum. (Mulom. i, 46.)

Alexander Aphrodisiensis states that young and old persons are most subject to calculus. (Prob. i.) From the late investigation of Dr. Prout, it appears that children until fourteen years of age are most liable to stone; then persons after forty; while those in the intermediate period are but little subject to the complaint.

With respect to the lithontripties mentioned above, all we

COMM. can venture to say is, that, having no experience of them, we do not think ourselves entitled to question or confirm their efficacy decidedly; but, as we repose little confidence in those now in repute, we cannot be supposed to have much in those which have fallen into disuse.

On inflammation, abscess, and ulceration of the urinary organs. Celsus recommends rest; a soft bed; opening the belly; sitting in hot water; avoiding cold food and drink; abstinence from everything that is saltish, acrid, and acid, and from apples; taking copious draughts; adding to the food or drink pepper, leeks, fennel-giant, and white poppy, to promote the urinary discharge, &c.

One may find in Galen many receipts for abscess and ulceration of the urinary passages, but they are similar to our author's.

Aretæus makes mention of ulcers of the kidney occasioned by stones, which he pronounces to be incurable. He states also that ulcers of the kidneys give rise to consumption. Without doubt he alludes to the morbid condition of the kidneys now known by the name of Bright's disease. Hippocrates has been supposed to refer to the same in the following Aphorism: "When bubbles appear on the surface of the urine, they indicate that the kidneys are affected, and that the disease will be protracted." (Aph. vii, 34.) Upon which MM. Lallemand and Pappas remark that *frothy* urine and *albuminous* are identical; and it is well known that Bright, Rayer, and Martin Solon have decided that albuminous urine is generally connected with a very obstinate disease of the kidneys. (Littré's Hippocrates, t. iv, 414.) It seems highly probable that Actuarius alludes to albuminous urine in the following passage: "When substances, the effect of melting, and resembling spiders' webs, float in the urine, they indicate either that the kidneys are diseased, or that the system is in a state of atrophy from wasting." (De Urinis, vi, 16.) On frothy urine, see, further 'De Urin.' (v, 4.)

Alexander lays down the rules of treatment very properly, recommending venesection, purging, and topical applications of a cooling nature, especially at the commencement. When the abscess forms, he prescribes a variety of things which are detergent without pungency.

When the bladder is ulcerated, Nonnus directs us to inject

into it by a syringe honey much diluted with water, or the seed of cucumber with the same. COMM.

The treatment prescribed by Cælius Aurelianus scarcely differs at all from that of the others in this case.

One of the oldest writers on diseases of the kidneys is Ruffus, who lived, according to Suidas, in the days of Trajan; so that he was prior to Galen, and perhaps to Aretæus and Cælius Aurelianus. As we have seldom occasion to meet with him in our researches, we shall give a fuller abstract of his opinions on this subject than we would otherwise have done. The symptoms of inflammation of the kidneys, as detailed by him, are pains below the loins, so that the patient cannot stand erect nor walk, but is obliged to lie upon his back, which position affords him most relief; the pains extending to the bladder and testicles; the extremities cold, more especially the legs and feet; frequent and painful desire to make urine, which is at first thin and watery, but afterwards becomes redder. These symptoms are followed by emaciation of the thighs and hips, debility of the limbs, and sometimes suppuration. His treatment is as follows: The patient is to be laid on a soft couch, and must abstain from food for one day, but long abstinence is forbidden. If the bowels require to be opened, this is to be done by means of emollient clysters, such as injections of hot water, decoctions of mallows, of linseed, or of fenugreek, to which may be added some oil. Large injections, however, are forbidden, lest they press upon the kidneys and occasion irritation. When the bowels are evacuated, and yet the pain does not remit, the parts may be wrapped in wool which is smeared with hot oil having rue, marshmallows, dill, or mugwort boiled in it. When the pain is acute, a vein at the elbow is to be opened; after which emollient cataplasms and plasters are to be applied to the back when the kidneys are affected, and to the fore parts when the bladder. When these remedies fail to remove the pain, the loins and groins are to be cupped, and then sponges squeezed out of hot water are to be applied, and the patient put into a hip-bath of hot water in which poppies, chamomile, and the like have been boiled. Then, when the patient is laid in bed, let him be fomented with bladders half-filled with oil and water; and afterwards let cerates of the oil of privet, &c. or fragrant malagmata be applied. When the pain is excruciating, he directs us to give a decoction con-

COMM. taining opium and the heads of poppies. In due time diuretics are to be administered, such as the root of acorus, ground-pine, cassia, spignel, parsley, sea urchins, radishes, carrots, and the like. When an abscess is formed, there is a discharge of tawny and more natural urine, there is swelling in the loins, strong heat in the kidneys, and the pain becomes duller with irregular fever. The abscess bursts either into the bladder or intestines. Praxagoras, he says, related a case in which there was pus voided by the anus for twelve years and probably longer. When it bursts into the bladder, pus is voided with the urine. Suppuration is to be promoted by frequent fomentations with sponges, by cataplasms of barley-meal with a decoction of figs in mead or wine, to which may be added pounded wormwood, spurge, &c. For promoting the rupture of the abscess, diuretics are prescribed, such as wild marjoram, mock dittany, and the like. When the abscess does not burst, acrid clysters containing black hellebore, radishes, garlic, and the pulp of colocynth are to be given. To these oil may be added, and when thus taken they will promote the rupture of the abscess. However, fomentations with sponges and plasters are to be applied to alleviate the pain. When the ulcers are of a mild nature (which is shown by the abatement of the fever and pain, and from the substances which appear in the urine being white and inodorous), the milder diuretics are to be used for cleansing them, such as the seed of pompion, the decoction of dates, &c.; or, when stronger things are required, galbanum, opopanax, turpentine rosin, and the like may be added to mead or wine. When the ulcers are putrid, Æthiopian cumin with must, rue with honey and wine, and the like may be given internally; while cataplasms of bitter vetches boiled in wine and honey are to be applied externally. It is proper also, he says, to inject some of the medicines for dysentery; to give clysters of strained ptisan; and to place the patient in hot water. If the matter is thick, a decoction of fennel, parsley, or wormwood is to be given. With respect to food, he recommends milk, especially that of mares or asses, along with honey; also cucumbers, lettuces, the flesh of kids, lambs, and goats, almonds, and wine; but vinegar must be avoided. All motion is to be abstained from. When there are symptoms of repletion, emetics are to be given. When the abscess points outwardly, he seems to direct us to open it and

apply the cautery; but here unfortunately the text is incomplete. COMM.

This account is so full and judicious that we think it unnecessary to give extracts from any more of the Greek and Latin authorities.

From the Arabians little or no additional information is to be derived. Haly Abbas recommends bleeding by opening the basilic vein, and then cataplasms of barley-flour, &c. He then gives a cooling draught containing the seeds of cucumbers, gourds, melons with purslain, mallows, and the syrup of violets. This part of his practice deserves consideration. When the abscess forms he directs us to apply cataplasms containing chamomile, fenugreek, melilot, &c. Alsaharavius, in like manner, recommends bleeding, cooling and demulcent draughts, the tepid bath, and discutient cataplasms. The same plan of treatment is fully laid down by Rhases. When pus is discharged from the bladder, owing to ulceration of it, he directs us to give astringent injections prepared from galls, sumach, purslain, pomegranate leaves, &c.

On hemorrhage of the kidneys. Our author's treatment is so fully stated that it will be unnecessary to multiply extracts from the others. It is mostly condensed from Aëtius. (xi, 27.) The latter makes mention of injecting into the bladder some astringent infusion by means of an instrument like a catheter, having a bladder attached to one extremity. When the coagulated blood (and the urine generally does coagulate it) cannot be got otherwise discharged, he recommends, like our author, an incision to be made in the perinæum.

Cælius Aurelianus also recommends injecting into the bladder some astringent infusion, such as that of hypocistis, knotgrass, &c. In the case of women astringent pessaries may be used.

Avicenna recommends us to inject the rennet of a hare. Haly Abbas directs us to bleed by opening the basilic vein, and then to give draughts containing various vegetable astringents, such as wild pomegranate flowers, cucumbers, and purslain, with alum, Cyprian earth, &c. According to Rhases, the discharge of blood by urine is often connected with disease of the liver.

The veterinary surgeon Vegetius ascribes the bloody water of cattle to general plethora. This is a very plausible hypothesis.

COMM. *On hardness of the kidneys.* Nearly the same account is given by Aëtius, and also by Avicenna, Rhases, Serapion, and all the medical authorities who have treated of this subject. Haly Abbas and Alsaharavius particularly commend the diachylon plaster. Ruffus, as quoted by Rhases, recommends rest, emollient clysters, the application of cupping-instruments to the back, tepid baths, refrigerant and sedative medicines internally.

On diabetes. Aretæus remarks that diabetes is a wonderful affection, being a melting down of the flesh into urine, occasioned by a cold and humid cause like dropsy. The disease, he says, is of slow formation, but when completely formed speedily proves fatal. His description of the symptoms is very striking: a fiery thirst, a never-ending desire to make water, a parched skin, a dry mouth, and so forth. Diabetes, he justly remarks, is a species of dropsy, the water in the one case being determined to the peritoneum, and in the other to the urinary organs. We have, in fact, known these diseases reciprocate. He recommends by all means attention to the thirst, endeavouring to allay it by means of the medicines called Adipsa; rectifying the stomach by purging with hiera; and applying epithemes of spikenard, mastich, and the like. For drink he directs us to give water in which the autumnal fruits have been boiled; and for food recommends starch, milk, and cold astringent wines. He concludes by saying that the general remedies and regimen proper in dropsical cases will answer in diabetes, and particularly mentions the theriac and mithridate. Among the causes of diabetes he mentions poisoning by the sting of the African viper, called the *dipsas*. This subject will be found treated of in the Fifth Book.

Celsus recommends exercise, friction, purging, astringent food, and austere wine. Galen states that he only recollected having met with two cases of diabetes. He maintains that it is such an affection of the urinary organs as lientery is of the bowels. He is decidedly of opinion that the kidneys are primarily affected, and not the stomach, as some had supposed. He explains his views of the nature of the disease with great precision. (De Locis Affectis, vi, 3.)

Aëtius has given the fullest account of diabetes. Upon the authority of Archigenes, he recommends at the commencement bleeding and diuretics, the latter being given to clear away the

vitiated urine from the kidneys; but if the disease be of long standing, he proscribes both those measures. He recommends also a cooling diet, ruddy wine diluted, cooling applications to the pubes and loins, and, in certain cases, narcotics, such as opium and mandragora. COMM.

Alexander's theory respecting the nature of the disease is the same as our author's, both having borrowed it from Galen. He recommends food of difficult digestion, such as the feet of oxen, the flesh of pompions, chesnuts, &c. He forbids all saltish, acrid, and diuretic articles. He says nothing of venesection.

Actuarius recommends purgatives, in order to determine to the intestines, and astringent and refrigerant remedies in general.

Avenzoar explains fully his views respecting the nature and treatment of diabetes, in which he follows Galen closely. But the fullest and most accurate of the Arabian authorities on this subject is Avicenna. In certain cases, he admits of venesection at the commencement. The remedies, however, in which he seems to place the greatest reliance, are emetics and sudorifics, which he gives with the intention of altering the determination of the fluids to the kidneys. He particularly directs the patient to avoid taking all diuretic articles, to use exercise on horseback, moderate friction, and, in the decline of the disease, the tepid bath with fragrant wine.

Serapion gives nearly the same account as Aëtius, only he says nothing of venesection. Haly Abbas states, with his usual precision, the theory of Galen and the other Greek authorities, namely, that the disease is occasioned by a preternatural increase of the attractive faculty of the kidneys, arising from heat of the viscus. Agreeably to this theory of the disease, his remedies are refrigerants and astringents. Alsaharavius advocates similar views of the nature and treatment of the disease. When the urine is thick, with some appearances of blood, he recommends venesection. According to Rhases, the affection is connected with preternatural heat of the kidneys and debility of their retentive faculty. He says it resembles lientery of the intestines.

To those who are conversant with the principles of ancient physiology, the theory advanced by Galen, and advocated by all subsequent authorities, will appear very plausible and ingenious.

COMM. The ancients appear not to have known that the urine sometimes possesses saccharine properties.

Rogerius, like the ancient authorities, refers diabetes to a hot intemperament of the kidneys, whereby their attractive faculty is increased. (Tr. i, 54.) All the earlier writers on medicine appear to have held the same hypothesis.

On strangury and dysuria. As these diseases arise from a variety of causes, our author has properly treated of them accordingly. We do not find that the other authorities supply much additional information.

Hippocrates mentions that there are many varieties of strangury. His remedies are the tepid bath, diluent drinks, diuretics, and anodynes.

Aëtius states that the disease is called dysuria when the patient has a desire and passes his urine with difficulty, and strangury when it is passed in drops. It is occasioned, he says, by acrimony of the urine, ulceration, or debility of the bladder. It may also arise from affections of the kidneys and liver, or from an intemperament. The treatment is to be varied accordingly.

When dysuria is connected with weakness of the bladder Leo recommends that pressure should be made with the hands on the hypogastric region.

Avicenna is particularly full upon these affections. For *ardor urinæ* Haly Abbas recommends various emollient and cooling articles, such as mallows, the seeds of cucumbers, pompions, and the hot bath, &c. When it proceeds from an inflammatory cause, he recommends the treatment directed in the beginning of this Section. When these remedies prove ineffectual, the catheter is to be used. He says that one of the most common causes of the complaint is debility of the expulsive faculty of the bladder. Alsaharavius treats fully of these complaints in much the same terms. When dysuria is connected with inflammation, he recommends bleeding, diluent drinks, and the warm bath. When it proceeds from a clot of blood he directs us to inject into the bladder the water of ashes. (*Aqua cinerum*, perhaps it should be *aqua cicerum*.) Rhases states that the complaint generally arises in old men from heat or ulceration at the neck of the bladder. He justly remarks that when retention arises from inflammation, no urine at all is passed, and the pain is constant;

and that, when connected with obstruction, the bladder gets distended. Comm.

For inflammation, pain, and ulceration of the bladder, Scribonius Largus recommends water into which a heated iron had been plunged. He adds that he had known the chalybeate waters of Tuscany do much good in diseases of the bladder. This may be said to be an anticipation of the modern practice, introduced, we believe, by the late Mr. Cline, of giving the tincture of muriated iron in such cases.

On incontinence of urine. Galen properly remarks that incontinence of urine is often occasioned by injury of the spinal marrow either through violence, or the application of cold. (De Loc. Affect. iv, 7.)

According to Avicenna it is occasioned by excessive cold, by relaxation of the muscles (*sphincter vesicæ?*) or weakness of the bladder, as happens at the end of certain diseases, or by the immoderate use of diuretics. Rhases says briefly, that the complaint is occasioned by excessive heat or coldness. When it proceeds from the former cause, he recommends a composition of coriander, vinegar, Armenian bole, acorns, &c. When from cold, he prescribes the following: Of dried acorns, of frankincense, q. s. to be rubbed into the pubes with oil of ben, or oil of rue. Haly Abbas attributes the complaint to enervation of the sphincter vesicæ and loss of the retentive faculty of the bladder. He also mentions its connexion with disease of the spine. Alsaharavius recommends various stimulant liniments externally, and galls, vinegar, and the like internally.

Ruffus briefly describes a disease of the urinary organs, by the name of *scabies vesicæ*, attended with furfuraceous sediments and pains in the hypogastric regions, and ending, for the most part, in ulcerations of the bladder. The disease is said to be of a very intractable nature. It is alluded to by Hippocrates. (Aph. iv, 77; where see the Comment. of Theophilus, ed. Dietz.) It is further stated in one of the aphorisms that blood, pus, and scales in the urine, accompanied with deep pain, indicate ulceration of the bladder. (Ed. Dietz., t. ii, 437.) Theophilus says, blood, pus, and scales in the urine, with a heavy smell, indicate ulceration of the kidneys or bladder. (De Urinis, 15.)

SECT. XLVI.—ON THE AFFECTIONS OF THE LIVER.

The affections of the liver being various (for it is subject to atony, inflammation, erysipelas, scirrhus, apostemes, ulcers, and obstructions), we shall treat first of atony of it, in which case, particularly those affected with it, are usually called hepatics. If, therefore, it evacuate the excrements in a state of chyle, but more liquid than natural, the distribution of the food to the liver being either diminished or altogether stopped, while the stomach is unaffected, it is to be inferred that the attractive power of the liver is in a weak state. But if they resemble the washings of newly-killed flesh, it is the alterative, and, as it has been called, the sanguificative power that is affected. But if the atony arise from a hot intemperament, in process of time it appears more feculent and very fetid, the bile being high-coloured and thick. Wherefore, the substance of the liver being already melted, the whole body also is melted down; and there is fever, anorexia, and vomiting of bile. When the intemperament is cold, the discharges are neither constant nor many, for the affection is a chronic one; and for several days the discharges from the belly will be more abundant, but less fetid, like the lees of thick blood, approaching to black bile. And many and various colours indicate a cold intemperament; for the fever is obscure, the face not collapsed, and there is rather a desire of food. Whichever of these intemperaments prevails, if complicated with the dry, the excrements appear drier and fewer in number, and there is more thirst; but, if the humid, they are more liquid and abundant, and the patients have less thirst. When the liver is inflamed, there is, in all cases, pain in the right hypochondrium, extending upwards as far as the clavicle, but downwards as far as the false ribs; an acute fever, dry cough, thirst, loathing of food, and difficulty of breathing; the tongue at first appears red, but afterwards black; there is vomiting of bile, and the belly is constipated. These symptoms being like to those of pleurisy, we have stated the difference under the head of pleurisy. When erysipelas is seated in the liver, the inflammatory heat is intense, there is ardent fever, and marasmus supervenes. In particular, when the concave parts of the liver are inflamed, there is nausea and vomitings, anorexia, intense inflammatory heat, deliquium animi;

and the parts often become congealed, so that dropsical effusions derive their origin from hence. When the convex parts are inflamed, the other symptoms just now enumerated are present, with a visible swelling along its circumference, which swelling is manifest both to the sight and the touch These are the symptoms of a strong and great inflammation; but if it is weak, we must order the patient to take in a large inspiration, and, if he says that he has pain in the right hypochondrium, we may conclude that there is moderate inflammation of the liver. But if an oblong tumour of a phlegmonous nature appear in the position of the muscles which lie over it, and none of the aforesaid symptoms be present, we know that the muscles themselves are inflamed. Weight with distension, and a sensation of pain in the right hypochondrium, without swelling or fever, indicate an obstruction of the veins, at the place where those of the porta and concave parts of the liver join those of its convex parts. When the inflammation is converted into an abscess, the pain and distension increase, inordinate rigors come on, and they cannot lie on the left side without increasing the pain in the liver. When the abscess bursts, the matter is discharged freely by the urine or bowels. If the tumour pass into a scirrhous state, the pain is diminished, but there is a manifest swelling, attended with hardness, and the surrounding parts become emaciated. But, in process of time, the diagnosis becomes difficult; for dropsy supervenes, and the whole hypochondrium is concealed by the water. For a hot intemperament of the liver, we must use those things which have the properties of moderately cooling and strengthening the viscus, such as endive and succory, sometimes eaten raw and sometimes boiled with coriander; and the decoction and juice of them may be drunk; and not only thus, but the plant, when sprinkled dry upon honied water, relieves hot and cold intemperaments of the liver. And the species of those herbs called intybus, and troximus, and the sow-thistle, are possessed of similar properties. And a cupful of the juice of citron added to honied water has the same effect, and that of the brake in like manner. But if the intemperament is moderate and complicated with obstruction, these things may be given in some light wine, or some of the diuretics. And the following pill may be taken: Of succory, dr. iv; of the root of ground-pine, dr. iv; give in boiled honey to the size of a Pontic nut, and let

the patient take some warm water, and then let him be made to drink the propomata from opium and the seed of hyoscyamus, and the antidote of Philo. In those cases in which the heat is intense, it may be very proper to give of the oil of roses, or of apples, in a draught. For food, let them take of the juice of ptisan, or chondrus, with hydrorosatum, and bread in like manner out of water, with some of the sweet potions; and, in a word, let them take such food as is moderately cooling without being obstruent; abstaining altogether from wine, unless they require it for some other cause, such as atony of the stomach, and in that case the kind which is given should be thin, weak, and watery. And erysipelas of the liver must be cured in like manner. When the intemperament is cold, we must proceed on the opposite mode; we must give them bread with wine, and cabbage which has been twice or three times boiled. Let them taste lightly of chesnuts, take what is sufficient of grapes, and of the flesh of fowls, and drink wine. Let them get a propoma from eupatorium, asarabacca, or the medicine from pepper; and a selection must be made for them from among the remedies formerly mentioned for colic and dysentery. The medicines called cyphoid do not suit entirely with the hot intemperaments, unless the heat be small and joined to much humidity; but they are excellent remedies for the cold, and more especially if complicated with humidity or obstruction of the liver. When the obstruction is occasioned by thick and viscid humours, we may give the myacantha (*wild asparagus?*), more especially the fruit of it, and the rind of the root of bay, agrimony in oxymel, or in the decoction of bitter lupines, with rue and pepper. And the flour of lupines in a draught; and of roots of cappers, p. ij; of costus, p. j, with wine; and the medicine from cacanus, are of use for obstructions occasioned by thick and viscid humours; also the iris, the fruit and rind of pistaches, horehound, and bitter almonds, and the trochisks from them, the root of dracunculus, and wakerobin, agaric, vinegar of squills, and oxymel. And the dried liver of a wolf, powdered and given with sweet wine to the amount of a spoonful, is applicable for all affections of the liver. And the antidote Theodoretus is one of the best remedies for obstructions of the liver, scirrhus, chronic inflammation, colics, and jaundice; and in like manner the picra with oxymel. The food which is given

should be of a heating and deobstruent nature, such as leeks in oxymel, marsh asparagus, and capers in like manner; and the other articles of food should be boiled with some of the calefacient and deobstruent condiments. They should drink light old wine, avoiding such as are thicker, and also frequent baths, more especially after food. If the affection be protracted, we may have recourse to venesection and purging, if nothing prevent. When the liver is inflamed, we must bleed from the right arm without delay, and take away a great quantity, if the strength permit. And over the viscus we must apply externally a cataplasm made of the flour of barley, of fenugreek, and of linseed, with dates, or quinces and the flower of melilot, wormwood, and oil of chamomile; in a word, we must mix astringents with emollients. The epithemes to be applied are that of Nileus, the fragrant, the Philagrianum, that of Apollophanes, that made of melilots, and the one called Copton. For great inflammations, the following one is of tried efficacy: Of the flowers of wormwood, of Celtic nard, of asarabacca, of saffron, of each, oz. j; of iris, of myrrh, of storax, of bdellium, of ammoniac perfume, of each, oz. ij; of a calf's marrow, oz. iv; of cerate of lentisk, lb. iv. Oxymel is also to be given to them, and the simple remedies, such as asarabacca, Celtic or Indian nard, bog-rush, and Macedonian parsley. We must stimulate the bowels by nettle, or the herb mercury eaten boiled; and during the decline of the complaint we must give of dodder of thyme (*epithymum*), and of polypody in honied water; and evacuate the bowels with a clyster, in the beginning by means of honied water with salts or nitre, but in the decline mix with hyssop, marjoram, or bastard saffron, or centaury and colocynth. In a word, the concave parts of the liver are to be purged by the belly, and the convex by the urine. For food, give them the juice of ptisan in which parsley has been boiled. We have already stated the cure of erysipelatous inflammation. When an aposteme is formed, we must promote its rupture, by applying a cataplasm of the composition called trispermus, with rosin, manna, pitch, the roots of marshmallows, pigeon's dung, and goat's dung. But let them take the propoma from the decoction of poley, that of the fumitory which grows in hedges, reduced to a third part, the decoction of treacle-mustard or of succory, and of the root of wall-germander. When the rupture takes place, honied water and

the other things mentioned for ulcerated kidneys may be given; and externally the plaster of Mnasæus, and the other emollient plasters, and the Icesian, or that from willows may be applied. When the liver is in a scirrhous state, there is little hope of recovery, as the affection will pass into dropsy; and yet it may be attempted by mixing ammoniac, bdellium, marrow, grease, and things of similar properties, with emollients. The patients may take draughts of such things as will act as deobstruents and detergents of the viscus, such as diuretics and lithontriptics, along with those just now mentioned for obstruction of the liver; the diet being regulated accordingly.

COMM. COMMENTARY. Consult Hippocrates (de Intern. Affect. 30); Galen (Meth. Med. xiii; Sec. Loc. vii); Aretæus (Morb. Acut. ii, 7; Morb. Chron. i, 13); Celsus (iv. 8); Alexander (vii, 19); Aëtius (x, i); Oribasius (Loc. Affec. iv, 96); Nonnus (182); Cælius Aurelianus (Pass. Tard. iii, 4); Octavius Horatianus (ii, 13); Marcellus (de Med. 22); Scribonius Largus (30); Avicenna (iii, 14, 1); Avenzoar (i, 13); Haly Abbas (Theor. ix, 30; Pract. vii, 31); Alsaharavius (Pract. xviii); Serapion (iv); Rhases (Divis. 62; ad Mansor. ix, 67; Contin. xvi.)

Hippocrates describes three varieties of hepatic disease, which appear to have been bilious fevers. It is not easy to define the principles upon which his practice is directed. He mentions, however, emollient applications, bleeding, purging, and vomiting; and, when the disease is protracted, recommends the side to be burned with spindles of box-wood smeared with oil. He directs abscesses of the liver to be opened by the cautery. (Coac. 457.) He states that abscesses of the liver are least dangerous when they open externally; more so when they open internally; and most of all when they open both internally and externally. (Prognost. 7.) He makes mention of hydatids, and says of them that when they burst into the cavity of the peritoneum, the case proves fatal. (vii, 54; where see the Comment. of Theophilus and Damascius, ed. Dietz. p. 540.)

Galen has laid down the principles upon which inflammation of the liver should be treated in the 13th book of his 'Methodus Medendi.' We can only afford room for his conclusions. He approves of venesection with the intention of producing revulsion. Such articles of food and medicine are to be given as

will emulge the biliary ducts without occasioning irritation, and Comm.
everything of the opposite kind is to be abstained from. Wherefore such things as are sweet and viscid are to be avoided, and only such as are detergent without pungency are to be allowed. Of this class are ptisan and oxymel much diluted. Astringents, such as pomegranates, are improper, because they occasion contraction of the vessels; and they are more especially to be avoided when the concave side of the liver is affected. When the convex is affected, these articles, being altered by the action of the liver before they reach the seat of the disease, prove less prejudicial. When the concave side is the seat of the disease, he directs us to evacuate by the bowels, which may be accomplished by mixing with the food cnicus (carthamus tinctorius?) the herb mercury, &c.; but, if stronger medicines are required, black hellebore, colocynth, the small centaury, and the like, may be given. When the convex side is affected, he directs us to give diuretics; at first parsley, but, after the inflammation has subsided, the stronger ones, such as Celtic nard, valerian, spignel, &c. He animadverts in strong terms upon the practice of the *Thessalian Asses*, so he calls the Methodists.

We regret that our limits prevent us from doing justice to the views of Aretæus. The liver, he states, is the grand seat of sanguification, being itself but a concretion of blood. Hence, he says, diseases of it prove speedily fatal. He accounts for the pain which is felt at the top of the shoulder or clavicle in this way: the liver, being enlarged and becoming heavier than natural, drags down the diaphragm to which it is attached, and thus stretches also the pleura from its upper adhesions, whereby pain in the part is produced. A crisis, he says, may take place by a hemorrhage, a copious discharge of bile, or of urine; or the disease may terminate in suppuration, or in dropsy. When pus is formed, it may be discharged by urine, by the bowels, or it may point outwardly. In this last case, he recommends us to open it with an instrument red hot. When it does not suppurate it is apt to end in scirrhus, which is marked by a dull pain in the part. His treatment of acute hepatitis consists of venesection, refrigerant and discutient applications externally, cupping or leeching the side affected, then applying cerates and emollient ointments, consisting of attenuants and diuretics, such as wormwood, elder, &c. The food is to be light, of easy dis-

COMM. tribution, and diuretic. His treatment of chronic disease is varied, according as the matter passes by the urine or the bowels; but the chapter on it is incomplete.

Celsus at the commencement recommends bleeding, purging even with black hellebore, cataplasms at first repellent and then calefacient. Diuretics are to be given, such as thyme, hyssop, &c.; and all cold things are to be avoided. When a vomica forms, it is to be opened and burnt.

Alexander's account is full and judicious. He says that, in cases of obstruction of the liver, when deobstruents are given before the swelling is softened, the juices being overheated become *like stones* and cannot be discussed. He alludes, of course, to hepatic calculi, or gall-stones. He gives copious directions for emollient ointments to be rubbed into the side to dispel the enlargement of the liver.

In treating of scirrhus, Aëtius recommends the emollient ointments, cupping, leeching, calefacient plasters, sinapisms, burning by medicines or by the actual cautery.

The account given by Actuarius is in so far important, as it shows that the views of practice had not changed in his days. In inflammation, he recommends to bleed two or three times, and to unite emollients with deobstruents in the external applications.

For a full exposition of the doctrines of the Methodists, we must refer to Cælius Aurelianus, of whose opinions we can afford room only for a very brief outline. The symptoms of scirrhus of the liver, as stated by him, are a round circumscribed tumour felt below the ribs, the colour jaundiced, the urine muddy, pain extending to the throat of the affected side, difficulty of lying on the left side, as this posture suspends the enlarged viscus. (By the way, Cassius assigns the same reason why persons labouring under disease of the liver or spleen lie easiest on the affected side. Probl. vi.) At the commencement he recommends fomentations, cataplasms, laxative food, and then cupping, scarifications, and leeching. When the attack is violent, venesection is to be premised. Frequent changes, acrid food, and emetics with vinegar of squills or hellebore are also mentioned. He recommends a sea-voyage, vapour-baths, hot springs, the sand-bath, and various stimulant and rubefacient applications to the side. He delivers his strictures very freely upon

the practice of the other sects. Thus he justly condemns as too bold and dangerous a measure the proposal of Erasistratus to lay bare the liver, and apply the remedies direct to the part affected. He thinks Asclepiades improperly rejected gestation, baths, cataplasms, and emollient ointments. He also condemns the free use of cauteries to the affected side. COMM.

Serapion, like Alexander, states strongly the danger of using discutients before emollients, lest the juices become indurated. No ancient author has treated of the diseases of the liver so fully as Avicenna. He is most minute in his distinctions of disease, and particular in his application of remedies. Among other diseased states of the viscus, he mentions diminution of bulk. Had not *inspectiones cadaverum* been common in ancient times, the existence of this state of diseased structure could not have been ascertained. In abscess, he and Serapion make mention of taraxacum or the dandelion, which was recommended by the late Dr. Pemberton in cases of diseased liver, and is still used occasionally. Haly Abbas directs us, when suppuration takes place, to determine to the kidneys by diuretics; and, when the abscess bursts into the cavity of the peritoneum, he advises us to open it. When it makes its way to the stomach or bowels, he recommends us to promote its discharge by purging. He remarks that sometimes an abscess will form externally to the liver and put on the appearance of hepatic abscess. He directs it to be opened with aperient medicines or the lancet. He takes notice of the pain at the top of the shoulder, which, like Aretæus, he attributes to the dragging down of the parts by the heavy liver. In the cold aposteme (chronic inflammation?) he recommends wormwood, fenugreek, hyssop, spikenard, fennel, and the like. One of his favourite remedies for hepatic disease is rhubarb. Alsaharavius gives a long account of these diseases. Inflammation he treats by bleeding, various laxative and cooling medicines, emollient plasters, &c. In obstruction he gives rhubarb, wormwood, fennel, endive, &c.; and bleeds, if there be a sanguineous plethora. He treats fully of a discharge of blood from the liver. When it arises from the bursting of a vein after excessive fatigue, he directs us to bleed; but when it proceeds from relaxation and debility, he recommends astringents externally and internally. The account of hepatic diseases given by Rhases in his 'Continens' is particularly excellent, but it is too lengthy

Comm. for our limits. He explains the pain at the top of the shoulder in the same way as Aretæus. He mentions that gross food produces enlargement of the liver, and hence animals fed on figs have large livers. For inflammation he recommends at first depletion and afterwards refrigerants, such as camphor, fleawort, and even snow-water. He recommends aloes with wormwood as a deobstruent cathartic.

SECT. XLVII.—ON CACHEXIA.

We are accustomed to call the commencement of dropsical affections cachexia. Wherefore we must cure it by bleeding, if nothing prevent, at intervals, and continuing the abstraction until the third or fourth day. But, in an especial manner, we must evacuate those who have fallen into this affection from retention of the hemorrhoidal or menstrual discharge; as in those cases which arise from a copious evacuation, we must abstain from venesection, and by all means purge with the hiera from colocynth. The diet should be light and desiccative; and recourse must be had to natural baths, namely the aluminous, and more especially the nitrous, and then the sulphureous; but the other kind of baths may be taken at greater intervals. Let them be exercised in every way, more especially by those who are called jatraliptæ. At last they must be put under a course of hellebore. They are wonderfully remedied by a propoma of wormwood, and by sinapisms and dropaces. If the affection is converted into dropsy, we must have recourse to the treatment applicable for dropsical cases in the manner about to be explained.

Comm. COMMENTARY. Almost all the authors referred to in the preceding Section may be consulted on cachexia and dropsy.

Aretæus gives an accurate account of this affection, which, he says, usually terminates in dropsy, phthisis, or wasting. He mentions many symptoms of it, such as œdema, difficulty of breathing, and so forth; and he correctly remarks that the alvine discharges are dry, white, crude, and without bile. His chapter on the treatment unfortunately is lost.

Cælius Aurelianus says that Themison was the first who ex-

plained the treatment of cachexia. He mentions as causes of Comm.
the disease intemperance, the improper use of medicines, hardness of the liver or spleen, long-continued hemorrhoidal discharge, vomiting, protracted fevers, &c. His treatment is judiciously varied according to the cause of the disease, and is given at great length.

Aëtius gives a very interesting account of the views and practice of Archigenes. He says the disease is generally occasioned by scirrhus of the liver or spleen. Like our author, he recommends bleeding if not contra-indicated, and purging with drastic cathartics, such as the hiera from colocynth, friction, rubefacients, exercise, the bath, and thin white wines. Celsus admits of bleeding, but not until after purging, friction, unction, and exercise have failed to restore the health.

Serapion expresses himself in much the same terms as our author and Aëtius respecting venesection; but Avicenna recommends not to have recourse to it unless there be a sanguineous plethora. He also forbids baths of sweet water, but otherwise he adopts the treatment recommended by the Greeks.

SECT. XLVIII.—ON DROPSY.

When the liver is greatly congealed, sometimes primarily, as when it has been inflamed, indurated, or otherwise affected, or when from sympathy with other parts, the process of sanguification ceases, and the affection is called dropsy. When a great quantity of air is collected with a small quantity of fluid between the peritoneum and intestines, so that the abdomen when struck sounds like a drum, the dropsy in this case gets the name of tympanites, being formed by flatulence about the stomach, belly, and colon, and by chronic fevers. But sometimes from hardness of the peritoneum and of the uterus in women, or from scirrhus, on the contrary, a great collection of fluid with a very small proportion of air is formed in the same parts, being confined as it were in a bladder, when the dropsy is named ascites, and is occasioned by the afore-mentioned causes; but, for the most part, it arises from hardness and scirrhus about the spleen and liver, and from chronic defluxions about the intestines; whereby it happens that the belly is swelled, while the rest

of the body is melted owing to its not being nourished. Sometimes throughout the whole body a colder and more pituitous blood is collected, either coming from the liver, or deriving its origin from a melting down of the flesh of the whole body, which is as it were converted into water, so that the whole body appears white and pituitous like a corpse, and then the affection is called leucophlegmatia, dropsy of the flesh, or anasarca, being occasioned by protracted fevers, cachexia of the stomach, suppression of long-continued hemorrhoidal discharges, the female flux, dyspnœa, inordinate insomnolency, and similar causes. In treating these complaints, we commence generally with evacuation; but in ascites and tympanites it is by administering hydrogogue medicines; and in anasarca by bloodletting, more especially when the affection is formed by retention of the hemorrhoidal or menstrual discharges, unless the patients had been previously bled for cachexia; and in this case, as in cachexia, the evacuation must be made at intervals. Then, having carefully triturated the dried dung of an ox of the herd, boil it in oxycrate or oxymel, and sprinkling on it a fourth part of sulphur, apply it over the whole belly; or, apply a cataplasm of goat's dung with the urine of a child, made of the thickness of bath-sordes. These things purge strongly by the belly; and we may use cataplasms made of leaven, dried figs, calcined lime, nitre, iris, cardamom, native sulphur, ammoniac, bay-berries, stavesacre, the dung of wild pigeons, all or some of these may be used with oxymel. After which the epitheme, called spongium, made of goat's dung, evacuates the fluids in a wonderful manner, both by the insensible pores and by the belly. Afterwards we must apply desiccative plasters, that from willows, the Icesian, the barber's, that from bay-berries, the Polyarchium, and that from seeds. And the following one is wonderfully efficacious, for it fetches, as it were, the fluids from the deep-seated parts: Of the stone pyrites, dr. xij; of native sulphur, dr. xij; of ammoniac perfume, dr. xij; of cumin, dr. xvj; of nitre, dr. xij; add to a little wax and turpentine, and spreading it upon a piece of skin, apply to the whole belly. Let them take the propoma (liqueur) made by boiling the root of vervain-mallow in wine, or macerate the wild cucumber in austere wine, and give every three days, adding a cupful every day, until the dose amount to three cupfuls. The following is a very compound

mixture: Of balsam, of nard, of cassia, of cumin, of liquorice, of St. John's-wort, of bog-rush, of asarabacca, of carrot, of amomum, of myrrh, of Macedonian parsley, of sweet hay, of pepper, of hartwort, of cow-parsnip, equal parts. Each of these produces a good effect by itself, and in like manner all the diuretics. Squill baked and triturated with honey, and given as a linctus, provokes urine without trouble; or it may be boiled in the water which is drunk. And the following is an excellent remedy: Boil lb. ij of the inner part of squills in iij sextarii of austere wine until it be reduced to one third; give every day of this wine, beginning with a mystrum, until the dose amount to an ounce. The following is an excellent diuretic: Of moist alum, the size of a bean; dissolve in water; strain through a linen cloth; and give to drink every third day, or every alternate day. Picra given in oxymel, the theodoret, and the trochisk from bitter almonds also suit with them. There are many hydragogues, but the following are of approved efficacy: The seeds of the thymelæa (grana cnidia), xl or l; or lathyrides, xx or xxx; or of euphorbium, v or vj siliquæ; or of flakes of copper, dr. ij or iij; being mixed with crumbs of bread and formed into pills; or the juice of the rind of elder-root, drunk with prepared wine; or of the leaves of mezeron, of burnt copper, and of anise, equal parts; give in water at first to the amount of dr. j; and afterwards of dr. ij, or more. And the following are admirable pills: Of aloes, of euphorbium, of grana cnidia, of each, oz. j; of rhubarb, oz. ss; mix together with the juice of cabbage, and form into pills, and give to the amount of viij or ix siliquæ. And the antidote from cloves evacuates water in a wonderful manner. And we must try the effect of a hydragogue wine. The following makes an excellent one: Of squills, oz. iij; of parsley-seed, of the rind of the root of capers, of pepper, of each, dr. iv; of peeled grana cnidia, dr. j; of the Indian leaf, two balls; of best wine, xij heminæ; of raw honey, dr. xvj; beat together, sift, and macerate in the wine, but triturate the squill. The dose is three cyathi. After the evacuation of the water, we must use the theriac. And ox-dung dried and drunk to the amount of a spoonful every day is of mighty use. We must use the most stimulant clysters, unless the belly be spontaneously very loose, in which case we must rather use things for drying it up. When women are affected with dropsy we must use this

pessary: Of anise, of cardamom, of cumin, of nitre, of birthwort, of fenugreek, of pennyroyal, of the inner part of figs, equal parts; mix together in the oil called Susinum, and apply *per vaginam*. Afterwards we may use the natural baths perseveringly, and the sand-bath, but we must abstain from the others; but if they do ever go into a bath, let them sprinkle the body with powders from nitre, salts, mustard, lime, and the like. These things even without bathing are useful, when rubbed into the belly in a dry state, or with oil. In anasarca they must exercise the other parts as much as possible, and use dry friction in the sun. And a desiccative diet should be taken. Let them, therefore, eat pickle, mustard, garlic, wild and dry fowls, asparagus, picktooth fennel, leeks, wild carrot, and the other wild pot-herbs; and the theriac salts, or those of Iamblichus may be mixed with condiments; and old light diuretic wine may be used, or if it is at hand, the wine prepared with salt water. But the patients must abstain from much drink of any kind, and from water altogether.

When the dropsy is attended with fever, the patient must abstain from the more heating and acrid food or remedies; but we may give them intermixed with other things in case of urgent necessity. In tympanites, purgatives and every medicine which wastes the body must be rejected, and also the more drastic diuretics; and we must use both externally and internally such things as can attenuate and dissipate the flatus; and dry-cupping may be frequently applied over the whole belly. When those who have ascites are not benefited by any of the remedies already described, we must have recourse to paracentesis, which does not apply to any of the other varieties of dropsy.

COMM. COMMENTARY. See Hippocrates (de Intern. Affect. 25; de Ratione Victus in Morb. Acut.), and Galen's Commentary on the same (Prognost.), with the Commentary of Stephanus (ed. Dietz), and almost all the authors who treat of hepatic diseases may be consulted.

Hippocrates gives a tolerably correct account of the causes and treatment of dropsy. The varieties of the disease described by him are dropsy from the drinking of cold water, from disease of the liver, and from disease of the spleen. He further states that it is frequently the consequence of protracted fevers, diar-

rhœa, dysentery, and quartan fevers (de Aer. &c.) He mentions a species of dropsy which he calls the dry (Aph. iv, 11), which has been generally referred to tympanitis. See Littré (t. iv, 416.) In certain cases attended with dyspnœa he recommends venesection; and Galen in his Commentary states that these cases are, when the disease is preceded by suppression of the hemorrhoidal or menstrual discharges, or is connected with plethora. But no one, he says, ventures to bleed in tympanites or ascites. Hence Avicenna and most of the ancient authorities forbid venesection in dropsy, except under the circumstances mentioned by Galen. Galen says, indeed, in his work (de Venesect. ad Erasistrat.) that he had sometimes cured dropsy by bleeding; but it is not to be understood that he approved of it as a common practice. In short, he was no Sangrado, but had anticipated Blackall. One of his hydragogue potions is composed of cantharides. (De Reg. in Morb. Acut.) Hippocrates recommends us to perform paracentesis thoracis in the side at the third rib from the last. He also approves of paracentesis abdominis in cases of ascites; and directs us to burn the region of the liver, when that viscus is affected. He further approves of free scarifications of the testicles and thighs. He has described hydrops uteri, or hydrometra, a case which, although of rare occurrence, is occasionally met with. See Van Swieten (Comment. 1224); Vesalius (de Fabrica Hum. v, 9); Monro (Works), and Dr. A. T. Thomson (Paper in the Med. Chir. Trans. xiii, 1.) COMM.

Galen gives a long list of external and internal remedies for dropsical complaints. (Sec. Loc. ix.) Ox-dung mentioned by our author was a common remedy in ancient times, according to Galen. Diogenes Laertius relates that the celebrated Heraclitus died lying in a bed of it. Upon the authority of Antonius Musa, Galen recommends a cataplasm containing elaterium, staves-acre, and hyssop. He recommends a vinous preparation of elder. Pliny particularly commends this medicine in dropsy, and most of the ancient authorities make mention of its diuretic properties. Galen says that the liver is affected in all cases of dropsy. (De Locis, v, 6.) In like manner Stephanus, the commentator on Hippocrates, states that in all cases of dropsy the liver is affected, either primarily or sympathetically. Hippocrates refers one species of dropsy to disease of the parts situated in the loins, by which Galen and Stephanus

COMM. agree that he means the jejunum, mesaraic veins and kidneys. (Ed. Dietz. 139.)

Celsus describes three varieties of dropsy, namely, ascites, anasarca, and tympanites. He enjoins restriction as to food and drink, and recommends walking, friction, and sudorifics, such as heated sand and warm baths. He gives a long list of diuretics, as iris, valerian, saffron, cinnamon, &c. In tympanites he recommends emetics, cupping the belly, rubbing it with rubefacients, and applying sinapisms to it, or burning eschars on it with heated irons. In anasarca he recommends scarifications at the inner part of the leg, squills in a linctus, and the like. He approves of tapping in ascites.

Aretæus describes the symptoms of dropsy with great accuracy and elegance. He says it is a most unseemly disease, from which few recover, and those more by the aid of the gods than of art. He treats of the three varieties already mentioned, and also makes mention of hydatids. Hydatids, by the way, are described also by Galen (Comm. ad Aphor. vii, 55), and Rhases (Cont. vii). He remarks that it is wonderful how much the patient in dropsy flatters himself with hopes of recovery, more than in many other diseases far less dangerous. He states that there are partial dropsies, such as of the head, lungs, liver, spleen, and uterus. He mentions among the exciting causes of the disease the drinking of cold water, flatulent food, and the insect buprestis (*meloe vesicatoria* L.)

From a passage in Plutarch, it would appear that certain forms of dropsy had at one time been thought infectious. (De Serâ Num. Vind.)

Dioscorides and Ruffus praise elaterium as a hydragogue in dropsy. In the 'Euporista,' baked squills and oxymel are particularly commended, with various cataplasms externally.

Cælius Aurelianus states fully the causes of dropsy, such as cachexia, protracted fevers, hardness of the liver, spleen, peritoneum, or uterus; dyspnœa, cæliac affection, dysentery, retention of the hemorrhoidal or menstrual discharges, abstinence, an unseasonable draught of water, especially of salt water, the abuse of medicines, and so forth. He maintains, however, that the disease is the same, from whatever cause it arises. The common symptoms of all its varieties are said by him to be swelling, torpor, difficult breathing, disturbed sleep, thirst, diminished

urine, and sometimes latent fever. He informs us that Erasistratus in his dissections generally found the liver indurated. His external applications are very similar to those of our author. He particularly commends a vinous tincture of squills as a hydragogue. He approves highly of paracentesis, and has answered all the objections which had been made to the operation. He mentions that Asclepiades practised scarifications at the ankles. COMM.

The ordinary cases of dropsy are well stated by Serenus Samonicus in the following lines:

"Corrupti jecoris vitio, vel splenis acervo,
Crescit hydrops, aut cum siccatæ febre medullæ,
Aut avidæ fauces gelidum hausere liquorem."

Among his internal remedies he mentions broom-seeds, the wine of squills, elder, and hellebore.

Alexander states that a coldness of the liver is the cause of dropsy, in consequence of which it is no longer able to form blood, but converts the fluids into water, phlegm, or air. Hence the distinction of dropsy into ascites, anasarca, and tympanites. In certain cases of anasarca he permits venesection, in order to relieve the depression of the system. He adds afterwards that, if not only the liver, but also the spleen and stomach appear hard, and especially if combined with plethora of blood, venesection is to be had recourse to before all other remedies. But in ascites and tympanites he agrees with Galen in condemning venesection, and trusts principally to purging and friction. Like our author, he commends copper and the leaves of elder. Exercise, he says, is adapted in an especial manner to dropsical complaints, either by sea, on horseback, or in a couch. Horace, by the way, no doubt, alludes to the established practice of taking exercise for the cure of dropsy in the following passage:

"Atqui
Si noles sanus, curres hydropicus."
(Epist. i, 2.)

Alexander has stated correctly that the disease sometimes derives its origin from disease of the uterus, kidneys, spleen, liver, colon, heart, or other organ of the body. He remarks that dropsy is apt to come on in phthisical cases.

Our author has merely condensed the account given by Aëtius. His list of diuretics contains squills, spikenard, alum, spurge,

COMM. burnt copper, &c. Like Hippocrates, he approves highly of scarifications at the inner ankle. Upon the authority of Antyllus, he recommends lying in heated salt. In like manner, Galen and some of the other authorities speak favorably of insolation while the patient lies on sand, wheat, or the like. The *sand-bath* is mentioned as a remedy for dropsy by the earlier modern writers on medicine. See Theodoricus (iii, 33).

Leo, like preceding authorities, refers all dropsies to a coldness of the liver, and says they are mostly incurable. We do not find that Avicenna, Rhases, Avenzoar, and Serapion make any material alteration on the practice of the Greeks. In certain cases of anasarca they permit venesection, but generally condemn it in ascites. They praise mezereon or the chamelæa strongly as a diuretic; and also make mention of colocynth and scammony. Haly Abbas treats separately of anasarca, ascites, tympanites, and dropsy from a hot cause. When anasarca is connected with an obstructed secretion, he approves of bleeding; and, in general, recommends abstinence from drink, exercise in the sun, friction with sand or hard towels, sulphureous baths and diuretics. He concludes with an advice not to persevere too long in the use of any one medicine. In the treatment of ascites, he recommends mezereon, colocynth, &c., but disapproves in general of paracentesis. For tympanitis he prescribes various carminatives, such as parsley, fennel, spikenard, mastich, southernwood, melilot, &c. Alsaharavius expresses himself strongly in favour of venesection for anasarca; and for all kinds of dropsy recommends the sand-bath, sudorifics, and the common remedies mentioned above. The general causes of dropsy upon which Rhases most insists are induration of the liver and debility of the kidneys, so that they no longer attract the aqueous superfluity of the blood. He approves of paracentesis and scarifications of the feet and testicles when they are much swelled. Among his hydragogues, the most powerful are white hellebore, elaterium, scammony, and euphorbium. He mentions that he had known several dropsical cases cured by a spontaneous darrhœa, and hence he recommends us not to stop one when it comes on. When dropsy is connected with the retention of a natural evacuation, he approves of bleeding. He speaks favorably of the elder as a diuretic.

SECT. XLIX.—ON THE SPLEEN.

The use of the spleen being to attract from the liver the melancholic humour, which is, as it were, the lees of the blood, if its attractive power be weakened, or the passage obstructed by which this was formerly attracted, the black jaundice is formed, blood in an unpurified state being distributed over the whole body; and if there be weight and distension about the spleen, or if there be also pain, obstruction is indicated; but if there be none of these, it is weakness of the attractive power. But vomiting of black bile taking place without fever, or any other symptom of malignity, indicates a weakness of the retentive faculty of the spleen. A weakness of the expulsive faculty will bring on anorexia, the melancholic superfluity being no longer carried to the orifice of the stomach and exciting the appetite. When the melancholic humour is infarcted in the spleen, in the first place inflammation of it occurs, indicated by heat, pain, and tightness, but afterwards it passes into scirrhus, the heat and pain having ceased, while the swelling and hardness remain. Persons thus affected have fetor of the mouth, their gums are corroded, and ulcers in their legs are difficult to heal. When the liver sympathises, dropsy takes place, as formerly mentioned; wherefore intemperaments of it are to be cured like those of the liver. But when inflammation is present, we must bleed from the left arm at the elbow, or at the extremity of the hand, in order that revulsion may take place from as great a distance as possible, and also because of some natural alliance between these parts. Then we are to apply a cataplasm of attenuants which are not manifestly caleficient, intermixing some of the astringents with them. Such is that natural substance called the flower of salt. And this is an admirable cataplasm: Of fenugreek, oz. iv; of barley-flour, of cresses, of each, oz. j; of fat figs, lb. j; of the herb vervain dried, oz. j; macerate the figs in the most acrid vinegar, and boil with the other things already bruised together, and then boil again; or apply goat's dung boiled with raw barley-meal in oxycrate; and, if you choose, it may receive also some flower of salt. But having first used a fomentation of oil of privet with a little vinegar, use the emollient ointments; and first the more simple, such as this: Of wax, lb. iss; of the fat

of bulls, lb. j; of nitre, oz. iij; of turpentine, of the fruit of the chaste-tree, of the bark of the root of capers, of each, oz. v; having boiled the soluble ingredients, sprinkle the powders above. And the malagma of Nileus is an excellent one. If the inflammation is converted into scirrhus, we must use the most powerful applications so as to stimulate the skin, such as the one from goats' dung, and that from citrons, also that of Macherion, the barber's, the one from bay-berries, and that from willows. This one I have found to answer upon trial: Of arsenic, oz. ij; of sandarach, oz. ij; of wax, of turpentine, of each, lib. j; of dry pitch, lb. j; of galbanum, oz. j; of opopanax, oz. j; of the bark of the root of capers, of nut ben, of each, oz. iv; of ammoniac perfume, scr. vj; of the oil of nard, and of privet, oz. v. And ammoniac, when rubbed over the spleen with vinegar, is often of great use, and also, when drunk to the amount of three or four scr. with one scr. of castor, while sitting in the hip-bath, having previously chewed dried figs and spit them out. Or of ammoniac, p. j; of castor, p. j; give one drachm of these things, and it will be of great service for scirrhus; and, in like manner, the bark of capers, triturated with vinegar and applied. The same, when drunk with vinegar or oxymel, evacuates thick and viscid humours, and sometimes blood. And the bark of the willow is rubbed in similarly. And the ashes of the brazier's shop, when applied with raw barley-meal in oxymel, is of use; and the juice of centaury, when applied externally, and when taken in a draught; and the decoction of bitter lupines, when drunk with rue and pepper; and its flour, when applied as a poultice; and the water in which heated iron has been often extinguished, when given to the amount of three cyathi to such as have fever; and to such as are free from fever, to the amount of one cyathus with wine and vinegar; or the root of the wild dock with squills, to the amount of three oboli; or of wall germander, and of wild thyme, an acetabulum; all these may be given with oxymel; or, give two oboli of the juice of the pimpernel having a blue flower (*anagallis cærulea?*) with oxycrate; or vinegar of squills, or oxymel. These are compound medicines: Of the root of panacea, of ammoniac perfume, of the rind of the root of capers, of fuller's herb, of the inner part of baked squills, equal parts; give one drachm. It is also of use in asthmatic and dropsical cases.—*Another:* Of the fruit of

tamarisk, dr. iv; of pepper, dr. iv; of spikenard, dr. ij; of ammoniac perfume, dr. ij; triturate with vinegar of squills, and give one drachm in oxymel.

For scirrhus of the spleen. Of sow-bread, dr. xx; of bryony, dr. iij; of dittany, dr. ij; of baked squills, dr. viij; of fuller's herb, dr. vj; of the root of capers, dr. vj. Give a trochisk to the amount of three oboli in oxymel. And the trochisk from heath is also applicable. The food should be attenuant, acrid, and dry; little drink should be taken; but exercise, friction, and sinapisms should be had recourse to, and sometimes cupping with scarifications.

COMMENTARY. Hippocrates describes several diseases of the spleen in his work, 'de Internis Affectionibus.' He states that in scirrhus the spleen is sometimes larger and sometimes smaller than natural. It is an affection which continues long, but is not fatal. Sometimes, he says, it terminates in dropsy, and sometimes in suppuration, when he approves of burning the side. He also recommends diuretics and purging with hellebore. The description which he gives of the symptoms of enlarged spleen, in his work 'On Airs, &c.,' is very curious. Dr. Coray considers that it applies to scurvy. (See Notes, &c. 29.) COMM.

Aretæus remarks correctly that the spleen is very subject to scirrhus, but little so to suppuration. Scirrhus, he says, is removed with difficulty.

For scirrhous enlargement of the spleen, Celsus recommends unction, friction, and sudorifics. He forbids all sweet things, milk and cheese. He approves of pickled and salted things, acids, the vinegar of squills, a decoction of wormwood, and water in which a red-hot iron has been extinguished. Emollient ointments are to be applied externally.

Cælius Aurelianus says that some had directed the spleen to be cut out when it is much diseased, but he holds the proposal as mere words of course, and believes that the operation had never been performed.

Octavius Horatianus recommends as general remedies for complaints of the spleen, bleeding, purging, and fomentations with wool soaked in equal parts of oil and vinegar. When it becomes indurated he approves of vinegar of squills, friction, gestation, dropaces, salt baths, &c.

COMM. Most of our author's remedies are taken from Galen, who treats fully and scientifically of diseases of the spleen. He states, as a general principle of treatment, that the proper medicines in cases of indurated spleen are such as are of an incisive and attenuant nature. He, therefore, approves of the mixture of bitter with austere things.

Alexander forbids strong purging in the beginning of an inflammation either of the liver or spleen.

The Arabians treat of these affections similarly to the Greeks. Haly Abbas remarks that the spleen can bear much stronger medicines than the liver, and recommends in the indolent diseases of it various bitter and very acid medicines. In inflammation he very properly bleeds. These are his general principles of treatment, the detail of which he explains at great length. Avicenna and Alsaharavius treat of these diseases more minutely than any other of the ancient authorities. Rhases recommends camel's milk in cases of indurated spleen. He joins Archigenes in directing the application of sinapisms and leeches to the side.

SECT. L.—ON JAUNDICE.

Jaundice is a diffusion of bile over the whole body, sometimes of black, as we stated when treating of diseases of the spleen, and sometimes of yellow. There are many varieties of this complaint, the causes and diagnosis of which are as follows: If jaundice occurring suddenly in a febrile complaint diminish the fever, it is critical, being occasioned by a metastasis of the matter from the deep-seated parts, and, therefore, stands in no need of medicines, but is soon removed by baths and friction. But if it is attended with fever and bilious evacuations from the bowels, and if there be a sense of weight in the right hypochondrium, a hot inflammation of the liver is indicated, by which the blood, being rendered bilious, is conveyed over the whole body. When there is heat in the part without a sense of weight, the affection is occasioned by a hot intemperament alone of the liver. If it is without fever, and the alvine discharges are white, an affection of the gall-bladder, or of its ducts, is indicated. When there is a sense of heaviness in the

right hypochondrium, it indicates that the ducts are obstructed; but when without heaviness, weakness of some of its powers is indicated, either of the attractive, by which it attracts the bile from the liver, or of the expulsive, by which it propels the bile to the intestines. For when the blood is not purged of bile, it is diffused over the whole body (as we stated respecting the black jaundice); in which case the urine is voided very much mixed with bile. But jaundice is also occasioned by a hot intemperament of the solid parts, which convert into bile whatever is brought to them in place of food, in like manner as in anasarcous complaints a conversion to a pituitous fluid takes place. This variety of jaundice is recognized by its not occurring at once but by degrees, none of the afore-mentioned symptoms being present. Moreover jaundice is occasioned also by drinking certain deleterious medicines, and by the external application of poison from some venomous animal. The cure of a hot intemperament of the liver, and of inflammation of it, and of weakness of its powers, we have treated of under the head of the affections of it; and what we said there is to be applied here without alteration, that we may not be obliged to repeat the same thing. When both the ducts of the gall-bladder are obstructed, or either of them only, we must let blood from the right arm. But some, both in this case and in jaundice from inflammation of the liver, open the vessel near the middle finger of the right hand. And we must use anti-inflammatory cataplasms, and purge with hiera. But persons affected with jaundice must take the propomata from a decoction of parsley, maiden-hair, or dock, or of wild thyme, reduced to a third part; or sprinkle wormwood on the potion. Two cyathi of the juice of radish, drunk with a cyathus of wine, is also of great use; also two or three cyathi of succory alone, and with wine. In cases of jaundice from inflammation of the liver, give a draught of mulse, or of a decoction of slender birthwort, or of St. John's wort, or of maiden-hair, or of fuller's herb, or of madder, in like manner; or a drachm of the shavings of hartshorn with wine, or the decoction of carrot boiled in wine to one third; or they may take a drachm of native sulphur in eggs. These things are of great use also in obstruction. But viij scruples of the seed of orache, with Chrysattic, or any other must, if drunk when in the bath, effect a proper evacuation. But the piera

may be properly given in powder, or with oxymel, and the one called Theodoret; likewise the trochisk from bitter almonds. Give also of cinnamon what can be lifted with three fingers in a cyathus of mulse, or in mixed water; or of myrrh, the bulk of a bean, with twenty seeds of pepper, and the same quantity of cinnamon. Those affected with jaundice, owing to a warm intemperament of the solid parts, are to be treated with gentle friction, moderate exercise, unction and baths, with a moistening and moderately cooling diet, the juice of ptisan, intybus, endive, succory, fish, and light watery wine. The treatment of those who are affected with jaundice from drinking some deleterious substance, or from the bite of some venomous animal, will be laid down in the Fifth Book. When bile is lodged in the vessels of the face and eyes, inject elaterium to the size of a vetch, with a woman's milk, into the nose while in the bath, and then direct the person to descend immediately into it, but not to immerse his head; and after the bath, having given him a recruiting diet, again inject the errhine in the sun. The juices of sow-bread, of horehound, and of gith act in like manner. But let him draw into his nostrils, while seated in the bath, some acrid vinegar, and compress his nostrils for a short time, and it will produce a wonderful discharge.

COMM. COMMENTARY. See Hippocrates (de Locis in Homine, 40); Galen (de Med. sec. loc. ix); Aretæus (Morb. Chron. i, 15); Celsus (iii, 24); Cælius Aurelianus (Tard. Pass. iii, 5); Aëtius (x, 18); Oribasius (Cur. Loc. Affect. iv, 99); Actuarius (Meth. Med. i, 11); Nonnus (188); Pliny (H. N. xi, 37; xxvi, 76; xxviii, 64); Ruffus Ephesius (ii); Palladius (de Feb. 6); Alexander Aphrodisiensis (Probl. i, 90); Octavius Horatianus (ii, 14); Scribonius Largus (31); Marcellus (de Med. 22); Serapion (iv, 9); Avicenna (iii, 15, 1); Avenzoar (i, 14, 6); Haly Abbas (Theor. ix, 33; and Pract. vii, 41); Alsaharavius (Pract. xviii, 11); Rhases (Divis. i, 64; Contin. xvi.)

With regard to the etymology of the term icterus: in the first place, Aretæus derives it from the animal *ictis*, which the Scholiast on Nicander pronounces to be a wild ferret. On the identity of the *mustela* and *ictis*, see further Pliny (H. N. xxix, 16.) Schneider determines it to be the *mustela furo*. (Ad Aristot. H. A. vi, 30.) Isodorus would seem to agree with

Aretæus, in his derivation of the term *Orig.* Suidas, however, derives the word from ἰκτῖνος, a species of kite, and Pliny from some unknown bird of the imaginary name of *icterus* (H. N. xxx, 11.) We have no hesitation in saying that we are disposed to follow the authority of Aretæus. COMM.

Hippocrates directs us to give at first fatty things, and to use the bath for three days; then to abstain from these things, and purge both the belly and the head, and give diuretics. But he forbids cholagogues, which, he says, only increase the disorder of the system. We have stated in the Second Book, Sect. IV, his views regarding jaundice occurring in fever. His commentator Theophilus explains that jaundice arises from obstruction of the ductus choledochus. Hippocrates lays it down as a rule that in cases of jaundice it is a bad symptom when the liver is hard. (Aphor. vi, 42.)

Our author follows closely the views of Galen. He remarks that, when in fever the bile is suddenly determined to the skin, it proves critical, and is easily removed by baths of sweet water, and friction with a discutient or rarefying oil. When the disease proceeds from obstruction of the vessels of the liver, he directs the administration of hot and detergent things, such as gentian, birthwort, and centaury. When occasioned by inflammation of the liver, the remedies suitable to that disease will be proper. When inflammation and obstruction are combined together, they are to be removed by relaxants and detergents. He gives from Andromachus and Archigenes a long list of compositions for jaundice; but we must be content with explaining his general principles without entering upon the detail of his practice. Galen, in another place, remarks that the poisons of certain reptiles occasion jaundice. (De Loc. Affect. vi, 8.) This fact is confirmed by modern observation. See Van Swieten (Comment. 916); Dr. Simson (paper on Jaundice, vol. i of the Medical Essays and Observations); and Rogerius (i, 47.) By the way, the ancients maintained that the primary action of certain poisons is exerted upon the liver. (See Book Fifth, XLII.)

Aretæus insists that jaundice is produced not only by disease of the liver, as generally supposed, but likewise by affections of the spleen, stomach, kidneys, and colon. He further states that jaundice is sometimes engendered by the condition of the general system. He appears to allude to non-elimination of the

COMM. bile. When the biliary ducts are obstructed, the bile regurgitates from the gall-bladder, and mixes with the blood in the liver, whence it is carried all over the body. In this case the alvine discharges are white, owing to their not being mixed with bile. When the spleen is the seat of the disease, the skin is of a dark yellow colour. He maintains that jaundice likewise arises from affections of the stomach and also of the colon, as digestion is partly performed in the latter viscus. But we must not follow out his description any further, as it is too long for our limits.

Celsus having described the disease, directs us to cure it by abstinence for one day, and then by opening the bowels; if fever is present, the suitable remedies are to be applied, but otherwise scammony or bitters, such as wormwood, are to be given. Some, he says, cured the disease by attenuant food and diuretics, but Asclepiades rejected the latter, and gave salt water as a purgative. Celsus approves of a salt Greek wine, baths, and so forth. During the whole course of the complaint he directs the patient to use friction, and take exercise; and if it is winter to have recourse to the bath, but in summer to swim in the sea. He approves of all kinds of exhilarating sports and amusements, whence the disease, he says, has got the name of *regius morbus*. Isidorus, in like manner, says of it: "Regium autem morbum inde estimant dictum quod vino bono et regalibus cibis citius curatur."

Pliny directs us to cure jaundice by producing perspiration with the root of the cyclaminus or sow-bread.

Cælius Aurelianus says that jaundice is brought on by indigestion, or by cathartic medicines which have been taken and have not operated. Sometimes, he says, it is attended with enlargement or scirrhus of the liver, and sometimes, though rarely, the spleen and stomach are affected sympathetically. If the attack is violent, he does not disapprove of venesection; after which the sick are to be restored by soothing treatment, exercise, and food of easy digestion. The accessory symptoms, such as hardness of the liver, spleen, and stomach, are to be attended to; and the bile is to be carried off from the system by administering acrid clysters, and giving infusions of wormwood or wild succory. He also approves of sternutatories such as elaterium; of masticatories given while in the warm bath, and of determining to

the skin by sudorifics and medicines which produce pruritus. COMM. He also recommends change of air, gestation, swimming in water, frequent vomiting excited by simple means, and acrid food such as capers, squills, &c. He approves likewise of giving a thin wine, and the decoction of hellebore when the disease is protracted; but disapproves of the indiscriminate use of cholagogues, cathartics, and diuretics, such as scammony, and colocynth, with wormwood, birthwort, St. John's-wort, anise, &c. He thinks mental relaxation and serenity of great consequence to the cure.

Aëtius gives an accurate account of the disease, but his views are very similar to those of Aretæus. He maintains that there are other causes of jaundice besides obstruction of the duct of the gall-bladder. When the affection is not critical, he recommends bleeding and purging. He says that strong purging with colocynth, scammony, and other drastics is required to produce revulsion from the skin. He also approves of deobstruents and diuretics, which are to be given while the patient is in the hot bath. He speaks of sternutatories and sialogogues, like our author. He likewise strongly recommends emetics (iii, 119.)

The treatment recommended by Oribasius, Actuarius, Nonnus, and Octavius, is very little different from our authors. According to Actuarius, the colour of the urine which is characteristic of jaundice is the *cærulean*, that is to say, the colour of a ripe cherry, or of a dark-coloured wine. (De Urinis, vi, 7.) Theophilus in like manner states that the *cærulean-coloured* urine indicates jaundice. (De Urin. 6.)

Ruffus the Ephesian describes very correctly the situation and use of the gall-bladder, and remarks, that when its duct is obstructed jaundice is produced, in which case the stools are white and clayey. Aëtius' recommendation of emetics is upon his authority.

Alexander Aphrodisiensis states that the constipation of the bowels in jaundice is occasioned by the want of the natural bile, which serves as a stimulant to the intestines. For the same reason, he adds, the stools are of a whitish colour.

According to Leo, jaundice arises either from obstruction or from the conversion of the blood into bile by the heat of the system. He also adds that jaundice is sometimes critical.

The poet Lucretius (iv, 333) and the philosopher Aristippus

Comm. take it for granted that persons in jaundice see every object tinged with yellow. (Sextus Empiricus, adv. Math. vii, 195.)

According to Serapion, a redundance of yellow bile in the body is occasioned either by the system's not being properly purged of it, or by an over-secretion of it, or by a combination of these causes. Obstruction, he says, may take place either in the liver itself or in the gall-bladder. Sometimes, he remarks, the liver having been inflamed, becomes as hard as a stone, or its ducts are obstructed so that the blood becomes mixed with bile, and in this state is carried over the whole body. He adds, that perhaps the whole gall-bladder is affected, or only one of its ducts, namely, either the superior one, by which it receives bile from the liver, or the inferior, by which the bile passes down to the intestines. In like manner he afterwards states, that sometimes the superior duct losing its tone and becoming obstructed, the bile becomes mixed with the blood; or, the inferior being obstructed, the bile regurgitates to the superior, and becomes intermixed with the blood. And sometimes, he says, the affection arises from the gall-bladder being over-distended in like manner as the urinary bladder sometimes is. When the disease is from obstruction he recommends attenuants, purgatives, emetics, and the other remedies directed by the Greeks. A similar account is given by Avicenna. Like Aëtius, he approves of venesection in certain cases, in opposition to Galen, who, as a general rule, forbids to let blood in jaundice. (De Purg. Virt.) Avicenna also describes the species of jaundice connected with disorder of the general system, described by Aretæus. Avenzoar says that the ducts are obstructed *aut verruca aut pustula.* The exact signification of these terms cannot easily be determined, but it seems probable that they refer to gall-stones. But the following passage of Haly Abbas puts it beyond a doubt that the ancients were acquainted with hepatic calculi or gall-stones: "Some," he says, "relate that calculi are formed in the liver, cæcum, and colon." (Theor. ix, 34.) Haly directs us, when jaundice is connected with inflammation, to bleed, and purge with myrobalans, hepatic aloes, &c. He also makes mention of emetics among his general remedies. When connected with obstruction, particularly of the gall-bladder, he recommends bleeding at the arm, a decoction of wormwood, hiera, scammony, and various remedies of a like nature. To remove the yellow

colour of the eye he recommends the tepid bath, and the application to the eyes of the fumes of vinegar. For the cure of jaundice of the spleen, he prescribes the common remedies, and mentions one which he says he learnt from *a woman*, and found very effectual. It was a draught containing lentils, fennel, and the urine of a boy not come to puberty. Jaundice being a disease which often goes off without any remedies, has been, in all ages, a favourite with empirics. Alsaharavius treats of the disease in much the same terms; recommends bleeding when it is connected with an inflammatory cause, and attenuants, bitters, purgatives, and the hot bath according to circumstances. Rhases, who gives a very full account of jaundice, states that the disease generally arises from obstruction either in the liver or its ducts. He particularly recommends drastic purgatives, such as scammony, along with wormwood, fennel-seed, and the like. When inflammatory symptoms are present he approves of bleeding and the warm bath. COMM.

SECT. LI.—ON PROLAPSUS OF THE NAVEL.

The causes and surgical treatment of protrusion of the navel will be treated of in the Surgical part of the work. But, since some restore the parts to their natural state by medicines, we must now mention that method of treatment: Of fissile alum, dr. v; of lees of wine, dr. viij; of rose-oil, dr. x; of unripe gall-nuts, dr. ij; dilute with wine; make to the thickness of honey; and wash with it; and put on externally a sponge soaked in oxycrate, and surround it with a bandage.—*Another:* Of the outer skin of bruised beans, of galls, of pomegranate flowers, equal parts; boil in water, and when dissolved pound carefully, and wash with it; and apply the sponge, as formerly said.—*Another:* Of the parings of lead, dr. xvj; of hemlock, of manna, of cerusc, of the juice of hypocistis, of each dr. j; dissolve in wine, and use as above described.

COMMENTARY. See in particular Oribasius (Morb. Curat. iv, 117.) It is not necessary to multiply authorities, as all entertain similar views upon this head. The following is a simple receipt given by Celsus: "Cicutæ et fuliginis, denar. j; cerussæ COMM.

COMM. elotæ, denar. iv; plumbi eloti, denar. viij; ovis duobus; quibus etiam solani succus adjicitur."

Haly Abbas properly remarks that the umbilical hernia is a protrusion of the omentum or intestine at the navel. He recommends various astringent plasters, containing cypress, galls, alum, &c. (Theor. ix, 36; Pract. vii, 51.)

SECT. LII.—HOW TO MAKE THE CHIN AND PUBES CONTINUE LONG FREE OF HAIRS; ON THE PRESERVATION OF THE GENITAL ORGANS; AND, AMONG OTHER THINGS, OF DEPILATORIES.

Mix equal parts of Cimolian earth and ceruse with the juice of henbane, so as to have the thickness of the bath-sordes; then add of oil of lentisk, q. s.; pound and use.—*Another:* Pound together the juices of hemlock, of deadly nightshade, of henbane, and of the most tender leaves of lupine, and an equal portion of fleawort, and use, having first scrubbed the part and washed. But for some days previously the patient must drink water.

A depilatory for removing the hairs. Of the slaters which live about houses and roll themselves into balls, dr. ij; of sandarach, dr. iv; of quicklime, dr. viij; of old vinegar, one cyathus; of the lixivial ashes of figs, one cyathus; boil in a pot, and use in the bath.—*Another, simple and devoid of smell:* Of quicklime, one sextarius; of sandarach, oz. j; boil as aforesaid, and use. But the subject of depilatories is treated of along with the Diseases of the Eye.

COMM. COMMENTARY. Depilatories have always been made of similar ingredients to those which enter into our author's prescriptions, that is to say, arsenic and quicklime have generally entered into the composition of them. The following is one from Baptista Porta: "Constat vivæ calcis partibus quatuor, redactis in pulveris modum, auripigmenti singulari, et decoque." (Mag. Nat. ix, 4.)

It appears from many passages in the Roman Satirists that the practice of applying depilatories to the obscene parts was common in ancient times. Persius says:

> "Tu cum maxillis balanatum gausape pectis,
> Inguinibus quarè detonsus gurgulio extet?" (Sat. iv, 37.)

See the learned note of Casaubon; also, Juvenal (Sat. viii, 114), and the note of the Dauphin editor. The Fathers inveigh against this immodest practice. See Tertullianus (de Pallio), and Clemens Alexandrinus (Pædagog. ii, 3.) According to Athenæus, the Tuscans were anciently much given to the use of depilatories. (Deipnos. xii, 14.) See also Apuleius (Metamorph.) COMM.

As this subject possesses little interest now, we need not enlarge upon it.

SECT. LIII.—ON BUBONOCELE, ENTEROCELE, AND HYDROCELE.

Protrusions of the bowels occasioned by rupture of the peritonæum are of a very difficult nature, but those from relaxation are of easier cure; for happening commonly to children of a humid temperament, they, for the most part, can be cured without a surgical operation, by the application of remedies and suitable bandages. The under-mentioned remedies are to be applied; but I must mention, in the first place, that these diseases differ in situation only; for, when the intestine remains in the groin, it is called Bubonocele, and when it falls down into the scrotum, it is named Enterocele. Wherefore, take of pomegranate-rind, dr. x; of unripe gall-nuts, dr. v; boil in three cyathi of austere wine; pound and apply, having previously reduced the intestine and bathed the part with cold water. Loose it in ten days; the patient remaining on his couch thirty days, and drinking of the decoction of cypress with wine; or of cypress balls, three oboli, in diluted wine. This medicine is applicable to children.—*Another agglutinative application:* Of the roots of comfrey, of the juice of horehound, of bitter almonds, of gum, equal parts.—*Another:* Of turpentine, oz. iss; of wax, of frankincense, of myrrh, of isinglass, of snails with their shells, of each oz. j; macerate the ichthyocolla previously in vinegar for three days.—*Another:* Of cypress-balls, i. e. spherical fruit, oz. j; of galls, oz. j; of pomegranate-rind, oz. ss; of taurocolla, oz. iij; of manna, of frankincense, oz. ss; of comfrey, oz. ss; of snails with their shells, oz. j; boil the balls and rind in astringent wine for a considerable time; triturate; mix the other ingredients, and when they are added, use.—*Another:*

Of aloes, of pomegranate-rind, of frankincense, of the juice of hypocistis, of artificers' glue, of pitch, of bitumen, oz. iss; of sweet wine, q. s.—*Another more complex application, which will answer also with adults, when the disease is not of long standing:* Of chrysocolla, of taurocolla, of sarcocolla, of ichthyocolla, of gagate-stone, of blood-stone, of Syrian sumach, of manna, of acacia, of each, oz. iss; of the stone pyrites, of native sulphur, of the breathing magnet, of fissile alum, of manna, of frankincense, of each, oz. j; of Brutian pitch, oz. v; of snails with their shells, oz. j; of the dross of silver, oz. iv; of galls, oz. j; of squamæ stomomatis (*scales of steel?*), oz. j; of copper, oz. j; of bitumen, oz. vj; of myrtle-oil, q. s.; mix the dry things with astringent wine, until the preparation is of such a thickness as not to stain, and then use. If they cannot lie in a recumbent posture, bind the application firmly with a triangular bandage of thick materials and sufficient to retain the intestine. Let them abstain from flatulent food, much wine, frequent baths, strong motion, such as running, leaping, loud crying, and the like. For hydrocele, so as to evacuate the fluid: Of pepper, c grains; of bay-berries, lxxx; of nitre, dr. xx; of wax, dr. xl; mix with half a hemina of oil, and use.—*Another excellent application:* Of the flower of Assian stone, dr. vj; of grapes deprived of their stones, dr. ij; of Ethiopian cumin, dr. viij; of red nitre, dr. viij; having triturated, apply, fomenting with it late and early. Some also add of sulphur, dr. viij.—*Another:* Mixing unslaked lime with bath-sordes, apply with cerate; and mix some nitre with the unslacked lime.—*Another*: Having burnt the root of a cabbage, add the ashes to old axunge that has been melted, and remove it every third day. To prevent a collection of water, use the following malagma: Of wax, lb. iiss; of pitch, oz. iv; of ammoniac perfume, oz. iv; of liquid alum, oz. iss. The plaster of the white poplars and the other epispastics are also applicable.

COMM. COMMENTARY. As these diseases will be treated of more fully in the Sixth Book, it is unnecessary to say much about them at present.

Our author is most indebted to Aëtius (xiv, 22.) Nonnus recommends astringent applications of a similar nature. (192.) When there is difficulty of reduction, Rhases directs the use of

the warm bath perseveringly. Haly Abbas remarks that protrusion of the bowels will sometimes occasion constipation, pain, and death. He says nothing of an operation for relieving the strangulation. Alsaharavius declares that he had found all the applications recommended for the cure of these complaints utterly ineffectual after they are fairly formed. He directs us to return the protruded parts, and secure them by means of a bandage, along with a pad of lead and a plaster of pitch, &c. The Surgical treatment of these complaints is minutely described in the Sixth Book. COMM.

SECT. LIV.—ON INFLAMMATION OF THE TESTICLE AND SCROTUM, AND ON THE OTHER DISEASES OF THESE PARTS.

You may recognize inflammation of the scrotum from the pain being felt at the slightest touch of the hand, and from the heat and hardness appearing intense; whereas, when the testicle is inflamed, a slight touch does not give pain, which is only felt when the part is firmly pressed by the fingers, while the redness and hardness appear less at the surface; but, upon grasping it firmly, a deep-seated hardness meets the fingers; and fever is sometimes present. To inflammations of the testicles, in particular, venesection is applicable at the ancle; and to all these, in general, cataplasms and cerates. Cataplasms are to be applied, of the flour of beans boiled in diluted wine, with fat dried grapes deprived of their stones; or, boil the root of cumin or asphodel, and, having pounded, mix with an equal part of the flour of dried barley-meal, and apply as a cataplasm; or, linseed in diluted wine; or, fenugreek in honied water; or, the root in honied water; or, the recent lees of wine, with the flour of barley-meal; or, groundsel and green coriander, with dried grapes deprived of their stones. But if there is much heat, apply a cataplasm of the leaves of henbane with wheat-flour, or that of chick-peas; or, of the leaves of sweet-flag, or of unripe gourd. When the affection is protracted, and attended with hardness, boil the root of wild cucumber in honied water, and, having triturated with the flour of darnel, apply as a cataplasm. And this is an excellent remedy: Of dried grapes deprived of their stones, oz. v; of boiled chick-

peas, oz. iss; of cumin, oz. j; of sulphur, oz. ix; of nitre, oz. j; of rosin, oz. iiiss; triturate altogether with honey, and apply as a cataplasm. The following are convenient cerates: Of oil, one cyathus; of Colophonian rosin, oz. vj; of plumbago, of cumin, of dried grapes, of the flour of beans, of each, oz. iv; of wax, oz. ij; boil the plumbago with the oil to a proper consistence, then add the wax and rosin, and, taking it off the fire, pour it half cooled upon the pounded figs and flour.—*Another:* Of the oil of dill and of roses, of wax, of pine-rosin, of each, oz. v; of cumin, oz. iiss; of asses' dung, oz. iss; triturate the cumin with the asses' dung, and when the cerate is cooled mix and levigate; then, placing in a rag, use, applying above it wool out of oil from unripe olives; or, use equal parts of butter and rosin. If from sweats there be ulcers in the scrotum, sprinkle powdered gall or alum upon fat and goats' gall, and anoint. For testicles affected with aphthæ: Having first anointed with Cimolian earth and water, allow it to dry, and wash with warm water; then, having triturated dried myrtle and a small quantity of alsander, apply as a cataplasm. Excrescences upon the testicles are cured by the application of the lixivial ashes of the vine mixed with wine and water. When there is pruritus of the scrotum, triturate finely nitre, staves-acre, dried figs, and moist alum with vinegar and rose-oil, and anoint with it in the bath; but after the bath, rub in the white of an egg with honey.

COMM. COMMENTARY. On diseases of the obscene parts, consult Hippocrates (Epidem. v, 4, et alibi); Galen (Sec. loc. ix; Loc. Affect. vi, 6); Celsus (iv, 21, viii, 18, vi, 18); Aretæus (Morb. Chron. ii, 5); Oribasius (Loc. Affect. iv, 102); Aëtius (xi, 32, xiv, passim); Actuarius (Meth. Med. i, 15, iv, x); Nonnus (192); Alexander (viii, 9, 10); Cælius Aurelianus (Pass. Tard. v, 5); Marcellus (32); Octavius Horatianus (ii, 11); Moschion (de Morbis Mulierum); Scribonius Largus (233); Avicenna (iii, 20, 1, 2); Avenzoar (ii, 3); Haly Abbas (Theor. ix, 37; Pract. viii); Alsaharavius (Pract. xxii); Rhases (Divis. 79; ad Mansor. ix, 101; Contin. xxiv.)

Hippocrates relates a case of prurigo scroti which was removed by hot baths, but the patient afterwards became dropsical and died.

Many of our author's remedies are taken from Galen, but he has copied most closely from Oribasius and Aëtius. COMM.

The treatment of inflammation of the testicles, as laid down by Celsus, is very judicious, namely, bleeding at the ankle, a cataplasm of the flour of beans boiled in mulse with pounded cumin and boiled honey, and other similar applications. When it becomes indurated, linseed or the seed of fenugreek boiled in mulse, or the like, are to be applied. When the testicles swell from a blow, blood must necessarily be extracted from them, more especially if they are livid.

Avicenna is particularly full upon these and all the other diseases of the obscene parts. For pruritus of the testicles and scrotum he recommends bleeding, cupping in the vicinity of these parts, the application of leeches, hot fomentations with acacia, sal ammoniac, &c., and the other remedies mentioned by Paulus. For apostemes he directs us to bleed in the arm and ankle, and to use applications similar to those of our author. Rhases recommends bleeding in the arm and ankle, and at first cold applications, consisting of vinegar and rose-water, which, if the complaint does not abate, are afterwards to be exchanged for suppurative ones. Haly's treatment is nearly the same. Alsaharavius, like Avicenna, treats inflammation of the testicles by bleeding in the arm and ankle, and using various local applications of a cooling nature. For pruritus he recommends applications containing ceruse, sulphur, nitre, sal ammoniac, and strong vinegar. Rhases mentions that he had an enlargement of the right testicle for which he took an emetic, whereby a manifest reduction of the swelling was produced, and by a repetition of this process the complaint was entirely removed.

SECT. LV.—ON GONORRHŒA AND LIBIDINOUS DREAMS.

Gonorrhœa is an involuntary discharge of semen, taking place frequently without erection of the privy member, owing to weakness of the retentive faculty. In this case it will be proper to keep the patient in a state of rest, covering the loins and pubes with compresses out of wine, oil of apples, or that of the flowers of the wild vine; and cataplasms may be after-

wards applied, made of dates, apples, flowers of the wild vine, acacia, hypocistis, sumach, and the like. He may also be made to sit in a hip-bath of the decoctions of lentisk, of bramble, and the like, in wine, or even in water, and use desiccative food. After a little while, he may take gymnastic exercises, by which both the general system and the affected parts will be restored to strength. Redundance of semen has been treated of sufficiently in the First Book, under the head of Hygiene; and there, too, impotence is treated of. A cool couch is beneficial in cases of libidinous dreams; also, laying on the right or left side; all medicines of a cold nature rubbed into the loins, such as coriander, hemlock, ceruse, and purslain, all of which are to be used with vinegar.

COMM. COMMENTARY. Celsus recommends strong friction, affusion of cold liquids, swimming in cold water, food and drink of a cooling nature, avoiding everything flatulent and calculated to engender semen, applications such as rue and vinegar to the part, avoiding lying upon the back, and so forth.

Aretæus, in his chapter on Gonorrhœa, makes some very ingenious speculations on the effect which the semen genitale exerts upon the development of the moral character. He remarks that a long-continued draining of the semen sometimes occasions paralysis: he alludes to the tabes dorsalis, a disease well described by Hippocrates. He properly states that gonorrhœa proceeds from relaxation of the genital organs. With regard to the treatment, he recommends at first cooling and astringent applications to stop the flux, but these are afterwards to be exchanged for calefacients and rubefacients. Castor, mint, and the theriac are to be taken internally, along with strong exercise.

Galen defines gonorrhœa to be an involuntary emission of semen, arising from debility of the genital organs, especially of the spermatic vessels.

Aëtius gives a full account of gonorrhœa from Galen, and of oneirogmon from Philagrius, but his treatment is little different from our author's. For the latter he directs the patient to take such things as are calculated to prevent the formation of semen, as rue, calamint, the chaste-tree, &c.; and further recommends astringent and refrigerant applications, lying on a

hard bed, wearing a plate of lead on the loins, and abstaining from the usual provocatives to venery. COMM.

The practice of Alexander is exactly the same as that of Aëtius.

Cælius Aurelianus treats oneirogmon upon much the same principles, namely, by cooling applications and injections, the cold bath, astringent food, and so forth. He makes mention of a disease of the genital organs, which we have met with in practice, although we do not recollect to have seen it noticed in any modern author, unless Heberden alludes to it (Comment. 80.) It is an emission of bloody semen *in actu venereo*. He directs it to be treated by astringent and restorative remedies.

For oneirogmon, the Pseudo-Dioscorides recommends an infusion of the seed of lettuce and purslain, the decoction of nymphæa, &c. (Euporist. ii, 100.) Dioscorides himself recommends hemlock. (Meth. Med. iv, 79.)

Avicenna and Rhases follow the treatment of our author. For the oneirogmon, Haly Abbas recommends various refrigerant and sedative medicines, such as purslain, coriander, lentils, fleawort, poppies, roses, &c. For gonorrhœa he recommends bleeding; emetics if connected with repletion; sleeping in a cold place; various anodyne, astringent, and refrigerant medicines, such as henbane, poppies, roses, lettuce, &c. He also directs a plate of lead to be worn over the loins. Alsaharavius treats minutely of these complaints according to the nature of the exciting cause. His general remedies for gonorrhœa are of a refrigerant and cooling nature, such as citrons, pomegranates, lettuces, henbane, &c. with a plate of lead and other cooling applications. For oneirogmon he recommends liniments of camphor and opium, lying on a hard bed, and refrigerant medicines. Rhases recommends styptic applications, snow, the plate of lead, and the cold bath. He speaks also of rubbing the parts with myrrh, henbane, and opium.

On the pollutio nocturni somni referred to in Deut. xiii, 13, see Isidorus (Comment. in Deut. 20.) Pliny treats of certain herbs which excite, and others which dispel, the "somnia veneris." Martial, in his epigram addressed to Ponticus, expresses himself in terms of just abhorrence against the detestable vice of manustupration. Galen, however, relates a story of it with disgusting *sang froid*.

SECT. LVI.—ON SATYRIASIS.

Satyriasis is a palpitation of the genital organ, accompanying some inflammatory affection of the spermatic vessels, with erection; and, if the palpitation do not cease, it is apt to terminate in paralysis of the spermatic vessels, or in spasms. Those affected with convulsion die speedily, having at last inflation of the belly and cold sweats. This complaint sometimes, though rarely, affects women. Wherefore we must open a vein without loss of time, keep the patient upon a spare diet without wine, and purge the belly, not freely but gently, every day. The best articles of food are beet, mallows, a little of the herb mercury, and the soup of the shell-fishes. A simple clyster is no bad remedy. Diuretics must be avoided; and medicines of a cold nature are to applied to the loins, such as the juice of nightshade, of purslain, of henbane, or of hemlock. It may be necessary, also, to rub the penis and the perinæum with some soothing and cooling things, such as litharge, Cimolian earth, and ceruse, dissolved in vinegar, water, sweet wine, or rob. It is hurtful to lie on the back. He may drink of the root of water-lily, iris, and maiden-hair. Rue is beneficial both in gonorrhœa and satyriasis. Give, likewise, food from grain in small quantity, and do not gratify the thirst. When the affection is protracted, cupping with scarifications, may be had recourse to; or, if a plethora be present, we may evacuate by leeches. A cataplasm of raw barley-meal may also be applied to the belly.

COMM. COMMENTARY. Aretæus has drawn a lively but disgusting picture of a person affected with this complaint, which it is to be hoped that the "march of improvement" in morals has now rendered of rare occurrence. He calls it a most unseemly disease. According to his account, it will even prove fatal occasionally, and that within the space of seven days. He says the natural cure of it is a diarrhœa coming on with bilious discharges. This venereal mania, he says, is to be cured by bleeding from the arm or ankle to deliquium animi, purging with hiera, and wrapping the genital organs and adjoining parts with wool dipped in rose-oil and wine, or in decoctions of such narcotics as hemlock, nightshade, mandrake or

poppy; the applications in either case being frequently changed. COMM. When these things do not succeed, the neighbouring parts are to be cupped or leeched; and in case of necessity the aforementioned refrigerants are to be changed for calefacients, such as the oil of privet, or the Sicyonian oil. This treatment, he remarks, will prove soothing to the nerves. He also recommends castor and a refrigerant diet, from which wine and flesh are to be excluded. It appears, therefore, that our author's treatment is mostly taken from him.

Oribasius pronounces satyriasis to be a fatal symptom in acute fevers; and Professor Sprengel confirms the justness of this observation. (Hist. de la Méd. t. ii, 188.)

Cælius Aurelianus gives a very circumstantial account of this disease. His treatment differs from that of Aretæus in this respect—that he disapproves entirely of the refrigerant applications, and, instead of them, recommends soothing ones, namely, emollient oils, a hip-bath of oil and water, and the like. He approves also of bleeding, cupping, and leeching.

Octavius Horatianus treats it upon nearly the same principles, that is to say, he recommends fomentations with the vapours of hypocistis or hemlock, hard friction, exercise, and astringent food.

There is nothing original in the treatment of the Arabians. Haly Abbas recommends calefacient and desiccative medicines internally, such as agnus castus, rue, cumin, &c. He also permits the use of narcotics with desiccants, such as coriander, henbane, lettuce, and opium. To the member he directs us to apply a cataplasm containing the oil of roses, lettuce, coriander, and camphor; and when this fails, some opium is to be added. He enjoins hard exercise.

Alsaharavius recommends much the same treatment as our author, namely, bleeding from the arm or foot, diluent and refrigerant draughts, cooling applications containing vinegar, ceruse, &c.; and, if these do not succeed, leeches.

SECT. LVII.—ON PRIAPISM.

Priapism is a permanent enlargement of the penis, which is swelled both in length and circularly, and there is no venereal

appetite attending it. The part is swelled by a flatulent spirit engendered from viscid and gross humours by a moderate heat. It is clear, therefore, that the part is not to be heated but cooled moderately, with rose-cerate beat up with water, and with the cerate of chamomile applied to the penis and loins. The diet and medicines should be of an attenuant nature, without being manifestly heating. We must also apply those things which are found, by experience, to be naturally efficacious. We may, therefore, give them also to drink of the water-lily and the seed of the chaste-tree, and mix green rue with their condiments. Yet this must not be given at the commencement, since it is heating, but after the use of other attenuants. If we practise evacuation, it must be by vomiting; for that by the belly often occasions a defluxion to the neighbouring parts. Exercise and friction are to be had recourse to for dispelling the flatus. In none of the cases which we have been mentioning does coition answer, unless when we have reason to suppose that there is a redundance of semen owing to restraint from enjoyment.

COMM. COMMENTARY. Many of the ancient authorities make no distinction between satyriasis and priapism, but, according to Cælius Aurelianus, the former is an acute and the latter a chronic disease. Prosper Alpinus, the modern Methodist, says, there is this difference between satyriasis and priapism—that in the former there is violent venereal desire, whereas, in the latter, there is continued erection, but no desire nor emission of semen. It seems, in short, to be a sort of chronic chordee.

Our author, Oribasius, Aëtius, and Actuarius, follow the principles of treatment laid down by Galen. The latter speaks of the anti-aphrodisiacal medicines mentioned by our author.

Alexander forbids the use of such things as are of an intensely cold nature, especially astringents and narcotics. He recommends friction, exercise of the upper parts of the body, and abstinence from flatulent food. All incentives to venery are of course to be avoided.

Avicenna agrees with the Greek authorities respecting the anti-aphrodisiastical properties of rue. Like them, he recommends emetics, but disapproves of drastic purgatives. When the affection is of an inflammatory kind, Haly Abbas recommends general bleeding, cupping, leeches, and applications of a

cooling nature, such as vinegar, purslain, solatrum, gourd, &c. Comm. Alsaharavius recommends various refrigerant and anodyne remedies, internally and externally.

SECT. LVIII.—ON IMPOTENCE OF THE PARTS.

Those having this complaint have lost their venereal desires, and have become depressed in spirits on that account. The cause of it is a paralysis of the parts, or a defect of semen. Those things which engender semen are treated of under the head of Hygiene in the First Book; and there, too, the incentives to venery of a simple nature are mentioned; and we must now add those which are stronger. Wherefore we must use in general those applications called acopa which are recommended for paralysis; but in particular levigate a burnt swift (*stellio*), and, adding oil to it, anoint the great toe of the right foot, and then try the venereal act; and when you wish to give over, wash away the ointment from the toe. And the composition from swifts called polymigmaton is a very efficacious application; or propomata from medicines which rouse to erection must be taken, such as this: Of pepper, of pine-nuts, of Macedonian parsley, of the shavings of hartshorn, of turpentine, equal parts; mix with honey.—*Another:* Of raw chick-peas, of pine-nuts, of each, oz. ij; of rocket, of pepper, of each, oz. j; mix with honey, and give two drachms in wine. And the compound medicine called satyriaca, and such like, will be applicable. But we must also attend to the other causes of the complaint, and apply remedies corresponding to them.

Commentary. This Section is mostly abridged from Aëtius Comm. (xi, 35.)

Octavius Horatianus recommends moderate exercise, friction of the extremities, and particularly of the groins, with pepper, euphorbium, and the like; applying plasters (dropaces) of the same to the groins and loins, or making suppositories of them; giving flatulent food, such as rocket, pepper, and the seeds of tares; lying upon a downy bed; having the attendance of females; and indulging in obscene reading.

See a long list of aphrodisiacal medicines in Myrepsus (40);

COMM. and in Avicenna (iii, 20, 1, 18.) In the latter we remark the nettle, lupine, rocket, asparagus, parsley, cresses, beans, cinnamon, and an animal called *dabet alurel*, which we conjecture to be the stellio or swift. Haly Abbas treats minutely of this affection, according as it arises from paralysis of the part or defect of semen. In the latter case, as he considers the state of the parts to be connected with a dry and cold intemperament, he recommends juicy flesh, beans, vetches, sweet wine, and so forth. He approves of a hot bath in which violets have been boiled. He also gives calefacients, such as rocket, ginger, asparagus, onions, and the like. Alsaharavius mentions various causes of impotence. One of them is, "excessus delectationis ad illam quam diligit."

The aphrodisiacal properties of rocket are mentioned by Juvenal (Sat. ix, 134.) See also Pliny (H. N. xix, 6.) Juvenal appears to allude to aphrodisiacal friction. (Sat. vi, 52.)

Athenæus gives a marvellous account of the efficacy of aphrodisiacal medicines. (Deipnos. i, 11.) See the thirty-sixth Section of the First Book of this work.

SECT. LIX.—ON MATTERS RELATING TO THE GENITAL ORGANS AND ANUS.

Ulcers on the pudenda and about the anus, when free from inflammation, require very desiccative applications, such as that from burnt paper, dried burnt dill, and burnt gourd. For humid and recent ulcers, aloes is a good application, when sprinkled on them dry in a fine powder. But the medicine which gives least pain, and is as efficacious as any other, is pompholyx. If the ulcers are more humid, the bark of the pine by itself and bloodstone are proper; but if the ulcers are also deep, manna must be mixed with them; and if the ulcer be spreading, we must apply a cataplasm of dried lentil with pomegranate-rind, and use the plaster called Coracum from oxymel, the trochisk called Bithynus, and that from paper. Fissures in the privy parts and anus are remedied by roasted rosin (*colophony?*) rubbed with rose-oil, so as to become of the consistence of bath-sordes, and having the yelk of an egg and opium mixed; or the ashes of the dried leaves of ivy burnt, when pounded with rose-oil in a

leaden mortar, may be applied. And the trochisk from wine and oil and that from Phrygian stone are excellent applications for fissures and foul ulcers about the corona glandis, more especially when the prepuce cannot be drawn back.—Another simple application, which also blunts acrimony: Of cadmia burnt and washed, oz. ij; of the rose-leaves stripped of their nails (i. e. the white parts of the leaves), oz. vj; sprinkle it dry, having first wiped the part with wine.—The following is an application for condylomata: Of chalcitis, of uncleansed wool, of cerate, of hart's marrow, of bramble-leaves, equal parts, with cerate; and that from wine and oil in like manner. But if a concealed ulcer is found on the penis within its opening (*the urethra*), which is discovered from pus or blood being evacuated without urine, it may be cured by first washing it with honey diluted with much water, and then with milk, and then mixing with the milk the collyrium of aster; or the white trochisk, or that from lotus is to be put into a leaden mortar, and the parts anointed, by dipping a feather in it; and then a small twisted tent of scraped linen may be anointed with it and applied. A most excellent application is the one containing of galls, of pompholyx, of starch, and of aloes, equal parts, triturated with rose-oil and the juice of plantain.

For pains of the privy parts. Apply equal parts of butter and of rosin, both properly melted; or apply equal parts of myrrh and of roasted rosin (*colophony or fiddlers' rosin?*) triturated with the juice of the plantain.

For swelling of the penis. Of tender vine-leaves, dr. j; of ceruse, dr. v; triturate and apply; bathe with cold sea-water; enjoin rest; and apply bandages to the penis. The lixivial ashes of vine-twigs applied with vinegar cure thymous tumours of the penis, and do not permit them to increase again; and so in like manner the ashes of the burnt bark of willows. In general the thymus, myrmecia, and acrochordon will be eradicated by strongly corrosive applications, and become dead when treated with septics. But, in particular, elaterium when applied with salts is useful, also unripe figs with vinegar, nitre, and flour, and the juice of the fig when rubbed in; the burnt head of an anchovy pickled, verdigris calcined with native sulphur, the juice of tithymallus (*spurge?*) when rubbed in, the leaves of basil with copperas, or the fruit of the large sunflower applied with wine.

For inflammation of the anus. Of ceruse, oz. iv; of pompholyx, oz. j; or of soft cadmia, of frankincense, oz. j; of the juice of endive, one hemina; mix, adding the juice by degrees until it be all consumed, and then having made a cerate of two ounces of wax, and one pound of rose-oil, mix; and having shaved the part, soften with this strongly. Inject by an instrument for extricating pus, and apply a bandage above. It is of use for inflammatory fissures, and ulcers of the anus attended with heat or pruritus.

For erysipelas about the anus. Of diachylon plaster, lb. j; of rose-oil, q. s; of pure bread, lb. j; of saffron, oz. j; of opium, oz. j. The saffron and opium are macerated in must, and the bread in water; then, when they are pounded, the diachylon and rose-oil are put into them and allowed to soften. It is also applicable to gout attended with the greatest heat.—*Another, applicable also to inflammation of the anus:* Triturate ceruse with wine and rose-oil in a leaden mortar with a leaden pestle, anoint with it; or, having triturated ceruse, the white of an egg, and rose-oil in the same mortar until it become of the consistence of bath-sordes, anoint with it.

For acute pain of the anus. Of the tender leaves of henbane, of the tender leaves of purslain, of crumbs of bread soaked in wine, of the yelks of roasted eggs, equal parts; of rose-oil, q. s. After fomenting the part with the decoction of roses and melilots, apply this cataplasm.

An excellent application for inflammation of the anus, and excrescences thereof. Of ceruse, of litharge, of ammoniac perfume, of bdellium, of each, scr. vj; of turpentine, oz. j; of wax, oz. ss; triturate the powders with the juice of nightshade, of henbane, or of purslain; and having mixed the soluble articles, take, and having softened them with rose-oil, use. And the composition called Phicotyche, and that from plumbago, are excellent applications for inflammations of the fundament. And the trochisks from lotus, from winter-cherry, and that from roses are esteemed applications for the anus and privy parts.

For excrescences of the anus. When these excrescences are inflamed, we must use the general applications already mentioned, and in particular the following trochisk: Of ceruse, oz. iij; of pompholyx, oz. j; of litharge, oz. ij; of mastich, scr. iij, add to the juice of henbane. When they are free from inflamma-

tion, sprinkle the ashes of burnt cypress balls, having first washed the parts with wine, or the ashes of the burnt peel of dried gourd, or of the bones of dates in like manner, or the ashes of egg-shells and of fennel; or having mixed the juice of pomegranate leaves with an equal portion of white wine, wash with it for seven days. For callous excrescences: Triturate quick-lime and arsenic with strong vinegar. It will answer well if you anoint with it in the sun.

On hemorrhoids or piles. When piles discharge more than is proper, the consequence is, that the system is reduced to a watery state, and they lose their appetite. There is risk both from the hemorrhage becoming too profuse, and from its being altogether suppressed; and therefore the treatment is attended with difficulty. Wherefore, when the piles are numerous, one ought always to be left for the sake of purging the system. Some also are seated high up and do not make their appearance, which renders them difficult to be cured. Blind piles discharge nothing, but are on that account more painful than the others. On them, therefore, rub the juice of sow-bread, which will open them. For immoderate discharges, take of the Egyptian thorn, of the leaves of the elder, of mugwort, of each, oz. v; boil in eight heminæ of water to one-half, and add of ironwort oz. iv. The herbs are then to be thrown away, and to the decoction the following things are to be added in powder: Of melanteria, of round alum, of each, dr. viij; of litharge, dr. iv; of galls, oz. iij; of misy, dr. ij; of endive, dr. ij. Dissolve this powder in the decoction, and bathe with it seven times in the day; but on the following day bathe with an equal quantity of another preparation of the same kind, and on the third in like manner. If any part of them remain on the fourth day, pierce it with a needle, and if it has any feeling, or bleeds, prepare a decoction like the former, but add only one-half of the powder; but when you have washed with it touch with the powder, that they may be properly burnt. For the inflammation apply a bread-poultice. —*Another:* Having soaked pure bread in primary sauce, and having burnt it in a new pot, triturate, and apply it, having first bathed with wine. It is applicable also to excrescences.—*Another:* Of endive, dr. ij; of chalcitis, dr. j; of misy, dr. j; of copperas, dr. iij; of fissile alum, dr. ix; of burnt copper, dr. j; of malanteria, dr. j; use in a powder. The food for those who have im-

moderate discharges should be such as forms but little blood, and is not excrementitious, of a desiccant and astringent nature, such as chondrus soaked in oxycrate, rice, and halica, and of pot-herbs, intybus, succory, and purslain, and of wines such as are astringent. For blind piles, food of an opposite description is proper, but particularly the fish called calamary, the cuttle-fish, polypus, the torpedo, and the cartilaginous fishes; for these things raise a tumult in the blood. Emmenagogues are also proper remedies in this case.

For procidentia ani. Of the fruit of heath, of galls, of ceruse, of acacia, of the juice of hypocistis, of pine-bark, of frankincense, of Aminæan myrrh, equal parts; apply in a powder, having first bathed with austere wine.—*Another:* Of the dross of lead, of Syriac sumach, of each, oz. viij; of the flowers of roses, dr. iv; of Aminæan myrrh, dr. ij; use like the first.—*Another:* Of pine-bark, of manna, of litharge, of each, dr. viij; of dried cypress balls, of plumbago, of each, dr. ij; use as directed above. Bathing with the patient's own urine while yet warm is also useful.

COMM. COMMENTARY. Consult most of the works referred to in the fifty-fourth Section.

The first part of this Section is almost entirely taken from Galen (sec. loc. ix); the remainder seems to be abridged from Aëtius (xiv.) Galen (Meth. Med. v, 15) insists strongly that diseases of the penis should be treated with desiccative instead of epulotic applications.

No ancient author has treated so fully of diseases of the genital member as Celsus (vi, 18.) His description of the ulcers upon it is very minute. Ulcers, he remarks, are found either upon the prepuce, or on the glans, or beyond it on the member itself. If dry, they are first to be bathed with warm water, and then lycium (catechu?) out of wine, or the lees of oil boiled with the same, or butter with roses is to be applied. If there is a slight discharge, they are to be washed with wine; then honey and a fourth part of turpentine-rosin are to be added to the butter and roses for an application. When there is a purulent discharge it is to be washed away, and the part dressed with an application containing pepper, myrrh, saffron, and misy, boiled in austere wine to the thickness of honey. He mentions various other escharotics containing ærugo, alum, and the like. When

at any time inflammation comes on, a cataplasm must be applied. Spreading ulcers are to be treated with applications containing the escharotics we have just mentioned. When a watery sanies runs from the sore it is to be treated with basilicon (tretrapharmacon) melted with roses and some frankincense; and it is to be frequently bathed with hot water and covered up from the cold. The tubercles called phymata are to be burnt down with medicines or a cautery of iron, and when the crust falls off, the squama æris is to be sprinkled on the part. Cancerous sores are to be extirpated by escharotics, as by a composition of quicklime, chalcitis (sulphate of copper?) and arsenic; or they are to be cut out and the part burnt. Phagedænic sores in like manner are to be burnt with medicines or the actual cautery. COMM.

Avicenna approves of Galen's rule of treatment stated above. When sores are recent, he recommends in particular aloes, and when more humid, burnt copper. When an incarnant is required, frankincense is to be mixed. Prurigo is to be cured by venesection, purging, and liniments containing nitre, alum, sal ammoniac, or even stavesacre with vinegar or rose-oil. For prurigo, Alsaharavius recommends lotions of sea-water, decoctions of chamomile, saffron, and camphor pounded with vinegar, and the like applications. For hard pustules he recommends various corrosive applications, some of which contain arsenic. Haly Abbas remarks that ulcers on the genital membranes are attended with the same symptoms as those on other parts.

On diseases of the anus. Celsus has likewise treated very fully of these complaints. For rhagadia or fissures he recommends first the hot bath, and afterwards cooling ointments, such as old oil with litharge, and unwashed wool spread with a composition of liquid cerate and roses. The regimen is thus tersely pointed out: "Liquida, lenia, pinguia, glutinosa, meliora sunt." The tubercle called condyloma is said to derive its origin from inflammation, and is to be treated at first by making the patient sit in a hip-bath of water having vervain boiled in it; and then lentil with some honey, or a composition containing chalcitis, or alum with ceruse and litharge, or the like, is to be applied. If these do not succeed, the escharotics, such as verdigris, antimony, &c., or even the more powerful caustics are to be used. He treats hemorrhoids upon much the same plan as our author.

COMM. He begins by inculcating that there is danger in suppressing them suddenly. They are to be treated at first upon the soothing plan, by baths, emollient applications, and those directed for fissures. When these fail, strong caustics are to be applied, such as the composition consisting of arsenic, squama æris, and quicklime. Next day they are to be pierced with a needle. In certain cases he prudently directs bleeding from the arm. Procidentia ani is to be treated in the first place by fomenting the gut with austere wine and the like, and replacing it; and then applying the leaves of willow boiled in vinegar, a linen compress, wool, and a bandage. Fungous ulcers are to be bathed with tepid water, if in winter, or with cold if at any other season; and then sprinkled with squama æris, or dressed with a cerate containing the same with quicklime, &c. If these do not succeed, the parts must be burnt with potential or actual cauteries.

Galen remarks that diseases of the anus are difficult to cure, because the part is possessed of great sensibility, and is exposed to be irritated by the alvine discharges, which contain bile, ichor, and the like. Styptic substances, which do not produce much irritation, are most proper for them, such in particular are many of the metals. He gives a long list of applications recommended by Andromachus, Asclepiades, and others, the principal ingredients of which are ceruse, litharge, alum, rose-oil, and the like. For procidentia ani he recommends various astringent applications containing galls, sumach, roses, pomegranate rind, burnt lead, litharge, &c.

Aëtius gives a long account of these complaints, but we must be content with a brief summary of it. He treats procidentia ani in the first place with astringent applications, containing galls, hypocistis, austere wine, and the like; but when these things do not succeed, he directs us to burn the verge of the anus with the actual cautery. Hemorrhoids he advises us to extirpate with the knife; but when the patient will not submit to this operation, he directs us to burn them with caustics, such as arsenic, quicklime, and the like. He recommends various combinations of these medicines for condyloma, acrochordon, and thymus.

Octavius Horatianus may be consulted with advantage; but

as his general plan of treatment is not very different from that of Celsus, we shall not give an abstract of it. COMM.

For rhagadia Marcellus recommends a composition of litharge and rose-oil. He gives an interesting description of the process of curing hemorrhoids by an application containing arsenic, chalcitis, misy, and the like. This remedy is strongly recommended by the Pseudo-Dioscorides. He says that a mixture of equal parts of arsenic and sandarach will make them drop off in half an hour. (Eupor. i, 214.)

The Arabians treat these diseases upon the same principles. Avicenna describes three kinds of hemorrhoids. The first kind are like warts; the next are of a bloody nature; and the third are intermediate between these. He treats them, like the others, either by a surgical operation, or by powerful caustics, containing arsenic, quicklime, and the like. When hemorrhoids are gross, and do not yield to ordinary treatment, Haly Abbas directs us to apply septics, such as arsenic, quicklime, &c.; and when they become black, to dress them with ceruse ointment, or a mixture of rose-oil and the whites of eggs. Procidentia ani he treats, like Celsus, with astringents, such as galls, hypocistis, recrementum ferri, &c. For fissures he recommends emollient ointments containing ceruse, basilicon, wax, &c. Alsaharavius also approves of septic applications containing arsenic, &c. When the piles are old and callous, however, he prefers the surgical operation. He also prudently recommends gentle purgatives. Rhases directs, in cases of procidentia ani, when the anus is swelled, and the gut cannot be got readily replaced, the patient to be put into a warm bath and emollient applications used; afterwards astringents are to be substituted, and a bandage applied. He recommends us to extirpate hemorrhoids with the knife, the cautery, or caustic medicines; but advises bleeding in the first place. He says that when dressed with sandarach they speedily drop off. In prolapsus, when the anus is swelled, he directs us to bathe the parts with a decoction of mallows, &c., then to smear them with mucilaginous substances; to replace the gut, and secure it with a bandage.

The primary sauce mentioned in this Section of our author is thus explained by Lister: "Liquamen optimum. Istud garum a Paulo Ægineta vocabatur πρωτεῖον, seu primarium, quod nobilissimum illud esset." (Ap. Apicium, vii, 6.) It was

COMM. called garum nigrum and garum sociorum by the Romans. (Galen, Med. sec. loc. iii.) It is thus described by Martial:

"Expirantis adhuc scombri de sanguine primo,
Accipe fastosum munera cara garum."

(Epigr. xiii, 56.)

In the 'Geoponics' it is called garum hæmation. (xii.)

SECT. LX.—ON AFFECTIONS OF THE UTERUS; AND, FIRST, OF THE MENSTRUAL DISCHARGE.

With most women the menstrual discharge begins about the fourteenth year of their age; a few have it earlier, in their thirteenth or twelfth; and not a few are later than their fourteenth in having it. There is no limited time for the continuance of it, many having it only for two or three days, most women for five days, some for seven, and a very few have it for twelve days. The menses cease about the fiftieth year of age, a few have them till sixty, and with some they begin to disappear about thirty-five, particularly with such as are fat. When, therefore, the evacuation is delayed, it will be proper to have recourse to baths and potions before the expected period, such as the frequent draughts from sesame, or the headed leek boiled together with pepper and rue. But they must be drunk in Cretan sweet wine. Having drunk a cotylé of it, let the woman excite the flow of the menses by walking; and let her eat calamary, cuttle-fish, and polypus, and other things of the same kind, for they are particularly adapted for raising a tumult in the blood.

COMM. COMMENTARY. The following is a list of the ancient authors on midwifery: Hippocrates (de Nat. Mulieb.; de Morbis Mulier.; de Steril.); Galen (de Med. sec. loc. ix, et alibi); Aretæus (Morb. Chron. ii, 11); Oribasius (Med. Collect. iv; Synops. ix); Ruffus Ephesius (i); Actuarius (Meth. Med. iv); Aëtius (xvi); Soranus (de Arte Obitat.); Nonnus (103); Celsus (iv); Octavius Horatianus (iii); Pseudo-Dioscorides (Euporist. ii, 80); Moschion (de Morb. Mulier.; Isagoge Anatomica, xxix); Meletius (de Nat. Hom. 24, seq.); Marcellus (de Medicam. xxxiii); Eros (apud Gynæcia); Pliny (H. N. xxviii, xxx); Avicenna

(iii, 21); Serapion (v); Avenzoar (ii, 5); Averrhoes (Collig. iv, 60); Albucasis (Chirurg. ii); Haly Abbas (Theor. ix, 39; Pract. viii); Alsaharavius (Pract. xxv); Rhases (ad Mansor. ix; Contin. xxii.) Comm.

The ideas entertained by the ancients respecting the nature of the menstrual discharge may be best learned from Aristotle (de Generat. Animal. i, 19.) Our limits will not permit us to do justice to his theory of conception. It may be proper to state, however, that he holds the menses to proceed from a sanguineous superfluity (*περίττωμα*) in the system. This theory found a strenuous advocate in his great commentator Averrhoes (Collig. iii, 29); and Buffon's views on this subject are very little different. Hippocrates, in like manner, taught that the male semen is a superfluity collected from all parts of the body, and fancied that if any part of the parent was maimed, the semen was defective, and gave rise to a similar defect in the child engendered. (De Aere et Aquis, 52.) Pythagoras called it the froth of the blood and the superfluity of the aliment. (Plutarch de Placitis Philos. v, 3.)

Dutens gives a learned account of the ancient theories on the generation of animals. Suffice it to say, that Empedocles, Hippocrates, Aristotle, and most of the philosophers taught that all animals derive their origin from ova; but that Democritus and a few others maintained that they are produced from spermatic animalcules. (Origine des Découvr.)

It appears to have been the popular belief in ancient times that the moon exercises a certain influence on the womb; and hence Homer refers the sudden deaths of women to Diana. See Eustathius (ad Iliad. xx, 59.)

We may allude in this place to the ancient belief in superfœtation. See Hippocrates (de Superfœt.) Asclepius, a commentator on this work, relates a singular case from his own personal knowledge. (T. ii, 470, ed. Dietz.) Aristotle relates several curious cases of superfœtation. (H. A. vii, 6.)

SECT. LXI.—ON RETENTION OF THE MENSES.

The menstrual evacuation is sometimes retained owing to a weakness of the whole body, and sometimes owing to a parti-

cular affection of the uterus itself, from local coldness, or a blow, or a congenital intemperament, or from some sustained injury, for the most part from abortions, or from a primary affection of some of the more important organs, such as the liver, belly, and chest, or from some such part labouring under a chronic affection. When suppressed, it becomes the cause of many and protracted complaints. If, therefore, the discharge be suppressed or delayed, owing to a primary affection of any of the internal parts, we must first direct our particular attention to the cure of the part originally affected, and afterwards think of the uterus. The symptoms of these we have already mentioned. When none of them therefore is present, it is clear that the uterus is the original seat of the complaint; and when neither the age, habit, nor any other thing prevents, we must have recourse to venesection, yet not before the regular period of menstruation, but ten days after it is past. The quantity to be taken must not be more than two pounds and a half, nor less than one; and whether we bleed or not, we must purge with the hiera of colocynth, giving it to the amount of two drachms, in six heminæ of honied water. But when fever is present, it is not expedient to purge with hiera, but it will be advisable to open a vein during the first days of the fever. After the purging, we must give recruiting things for a few days, and afterwards recommend exercise by walking, friction of the lower extremities, and the bath. The most proper food will be that which is of easy digestion and humid, such as all sweet pot-herbs, and fishes taken from among rocks, the more tender parts of fowls, milk, honied cakes, thin white wine not very old; flesh and pulse, except ptisan, are improper. When the accustomed period is at hand, give of sea-fishes the cartilaginous, and the mollusca, as they are called, and the testacea, and headed leeks (*porrum capitatum*), boiled with rue and pepper; and let the woman drink the decoction of them, and apply ligatures to the lower extremities for three or four days. When the expected period is at hand, the ligatures are to be removed, and she is to take beforehand fragrant draughts of myrrh, to the amount of an obolus, or the size of a bean; or of castor with must, or with honied water; or the decoction of mugwort; or of sage after the bath in must, and in that of wormwood. The wine of wormwood should be drunk as a propoma during the whole time of treatment. When the period has gone past, and no

discharge, or at least none of any consequence has taken place, we must open a vein at the ankle, and abstract blood; but after the seventh or eighth day we must purge with hiera; and after the fourth day a calefacient plaster (*dropax*) is to be applied to the lower part of the belly, loins, and thighs. Having drunk water for three days, let a cataplasm, made of equal portions of mustard and soaked bread, be applied until the equinox, after which let the patient bathe. Next month, let dried figs instead of bread be mixed with the decoction of fenugreek, of mallows, of pennyroyal, of rue, and of mugwort. And let oil of lilies (*susinum*) or of marjoram be injected into the vagina; and let the pessary called Emeapharmacus, or the Olibanius be introduced. A pessary consists of carded wool, rounded to the shape of the finger, and impregnated with the medicines. This mode of treatment is generally sufficient for restoring the menstrual evacuation; but if stronger medicines are required, they are as follows: Illyrian iris drunk with wine and cyperus, the root of wakerobin, cassia, the schenanth, valerian, a decoction of the root of elicampane, myrrh to the size of a Grecian bean drunk with must in half a hemina of honied water, and two heminæ of the decoction of dittany, and ammoniac, and sagapene. To persons whose stomachs are less easily deranged, a small quantity of opopanax, made into a little ball, and steeped in boiled honey, may be given. Moreover, certain common seeds are calculated to promote the menstrual evacuation, but in an inferior degree, such as fennel, cumin, parsley, Cretan carrot, hartwort, bishop's weed, sison, chick-peas, juniper-berries, and all the diuretics. But the following things are to be applied *per vaginam*: Myrrh triturated with the decoction of wormwood, or of lupines; or triturated with the juice of rue; bdellium, in like manner; storax, the gum of the wild olive, and that of the juice of rue, in like manner; or the long birthwort made into the form of a collyrium; and so also the root of the great centaury, or of hellebore, or of the juice of scammony, and the medullary part of the wild gourd by itself, and mugwort formed with rue and galbanum, applied in the form of a fumigation. These things are calculated also to expel the fœtus.

COMMENTARY. One may find in Hippocrates a long list of medicines possessed of real or imaginary virtues as emmena- COMM.

COMM. gogues; such as cantharides, myrrh, peony, cumin, elaterium, squills, the fruit of juniper, seseli, thyme, St. John's wort, rue, castor, elicampane, nettle, sage, &c. Of these some were given by the mouth, and others applied upon pessaries. He also recommends fumigations with aromatics. The pessaries were supposed to be likewise capable of producing abortion; but Hippocrates, in his Oath, forbids to give them to pregnant women. It appears from Juvenal that fœticide was a very common practice in his time (see Sat. vi); and various methods of performing it are described by Avicenna (iii, 21, 2), which we forbear to explain, lest our pages should be instrumental in increasing the frequency of this disgusting crime. It would seem that the ancient Lydians practised some Malthusian process to prevent conception. See Athen. (Deip. xii, 11, with the notes of Casaubon and Schweigh.) Aristotle says that, with this intention, some anointed the os uteri with oil of juniper, or with ceruse and frankincense mixed with oil. (H. A. vi, 3.) Aëtius makes mention of a mixture of alum, galbanum, with wine, &c. being used for this purpose. (xvi.)

Although Galen has treated very fully of this disease in different parts of his works, and has explained satisfactorily the nature of emmenagogues, we shall pass him by on the present occasion, in order to afford us more room for doing justice to the views of Aëtius, whose account of amenorrhœa we consider decidedly the best we ever met with. Aëtius says that barren and pregnant women, singers, and dancers do not menstruate, the menstrual superfluity in the latter being consumed by too much exercise. It is undoubtedly true, as he remarks, that those who take strong exercise have less discharge than women who lead an indolent life. Sometimes, too, he says, a fat or lean state of the body will occasion suppression of the menses, because fat persons have too little blood in their veins, it being consumed in forming the fat; and hence too they seldom conceive, or, if they do, their offspring is puny. In those, too, who are much emaciated, the necessary sanguineous superfluity is wanting. The menses may likewise be suppressed from disease, such as loss of blood, profuse perspirations, vomiting, purging, or cutaneous eruptions. Callosities, cicatrices, and other diseases of the uterus will likewise occasion suppression. His treatment is judiciously varied according to the cause of

the complaint. Suppression, he says, brings on heaviness, torpor, pain of the loins, of the hindhead, of the root of the eyes, &c. When suppression arises from *a hot temperament*, it is to be treated with cooling and diluent food, such as ptisan, milk, lettuces, domestic kids and lambs, tender fishes and fowls, grapes, cucumbers, and a white watery wine. Baths of common water are to be used. When connected with *a cold temperament*, the patient is of a pale leaden colour, and her urine watery. She is to live upon food of a heating nature, with a generous fragrant wine, or the wine made with salt water, and must take active exercise. The suitable medicines are those of a calefacient nature, such as thyme, calamint, cassia, spikenard, or savin, taken in a white old wine. He also recommends myrrh, assafœtida, opopanax, castor, sage, rue, cumin, and the like, all of which are to be taken immediately after the bath; and when these do not succeed, he directs us to purge or give an emetic. Pessaries too may be used, but the more acrid substances, such as elaterium, cantharides, and white hellebore, must be rejected, as they are apt to occasion irritation and inflammation. Of his long list of prescriptions for pessaries, we shall merely notice the one consisting of turpentine, myrrh, honey, and saffron. When occasioned by *fatness*, the principal reliance is to be put upon an attenuant diet, but suitable fomentations and potions must not be neglected. Guarded purging with drastic cathartics, such as scammony or spurge, has often a good effect. Strong pessaries are likewise proper. When the suppression is connected with *plethora*, the patient experiences pains about the loins and lower part of the belly at the accustomed period, and a marked fulness of the veins is perceptible. It is to be cured by copious bleeding either from the arm or foot, by quietude, and the use of common fomentations. Restriction as to the bath and food must be enjoined. When connected with *emaciation*, the constitution is to be recruited by suitable exercise and regimen, not neglecting pessaries and potions. When occasioned by *vitiated humours*, such as bile or phlegm, the body is to be purged with the proper medicines, and the parts fomented. Fragrant articles are to be mixed with the food. The pessaries are to be made of elaterium, sow-bread, or the like, if bile prevails; but of anemone, pepper, or colocynth, if phlegm. When *a bleeding at the nose* is the

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COMM. cause of suppression, it is to be cured by sweating, vomiting, or other evacuations. But in this case, and when the suppression arises from barrenness or excessive labour, no marked inconvenience is felt, only conception cannot take place. When occasioned by *an indolent course of life* the proper remedies are suitable labour, exercise, gestation, a thin white wine, and living on attenuant and humid food. When the complaint is not connected with any of the causes or states above described, it is to be presumed that it is occasioned by some organic disease, which must be treated accordingly.

The same subject is well treated of by Avicenna, but we cannot afford room for even an outline of his account. Like our author, he approves of tight ligatures around the thighs, bleeding from the saphena; and among his emmenagogues we remark savin, musk, castor, and myrrh. All these occur also in Serapion's list. Haly Abbas recommends baths medicated with various stimulant articles, such as fennel, rue, chamomile, parsley, &c. He mentions pessaries and suppositories, or tents prepared with attenuant and stimulant medicines, such as myrrh, wild marjoram, rue, savin, hellebore, colocynth, wormwood, bull's gall, &c. He also speaks of fumigations with the vapours of aromatics, such as castor, olibanum, lignum aloes, &c. He approves of bleeding from the saphena, and of applying cupping-instruments to the thighs, especially when there is any determination to the nose. When connected with corpulence, he enjoins strong exercise, attenuant food, restricted diet, and purgatives. Alsaharavius treats fully of this complaint upon nearly the same plan as Aëtius. He says the stronger emmenagogues are wild mint, juniper, black hellebore, mastich, myrrh, colocynth, gentian, &c. To relieve the pains which sometimes precede menstruation, he recommends the tepid bath, moderate exercise, and attenuant food. Rhases recommends bleeding at the ankle, savin, purging with hiera, black hellebore, &c.; pessaries of the same, the hot bath, and stimulant friction.

Eros strongly recommends repeated bleeding at the ankle, the tepid bath, purgatives, diuretics, and emmenagogues, such as savin, calamint, myrrh, &c.

SECT. LXII.—ON IMMODERATE MENSTRUATION AND UTERINE HEMORRHAGE.

Immoderate discharges in women take place, sometimes from retention of the menses which break out more copious than usual, and sometimes after parturition at the full time, when they cease spontaneously for the most part; and frequently after miscarriages, when a violent hemorrhage often takes place, and proves dangerous. In the first place, then, we must apply ligatures round the members, at the armpits and groins; give to drink oxycrate not cold; sprinkle with oxycrate; and apply to the parts a large quantity of wool squeezed out of wine and oil, or rose-oil, or oil of apples, or myrtle-oil. For food, we may give chondrus soaked in oxycrate, or rice, or alica; but prohibiting wine, we may give austere hydromel, omphacomel, or the like. The patient may take propomata of pomegranate flowers in oxycrate, or the juice of hypocistis, or of acacia, or lycium, or Samian earth, or unripe grapes dried, or rhubarb, or the ashes of cork burnt in an Italian earthen vessel; or she may eat sesame soaked in oxycrate until it become soft. The following substances introduced into the vagina stop hemorrhage: The juice of hypocistis, or of acacia, with manna, being triturated with vinegar. An admirable application is a sponge soaked in wine or liquid pitch, and applied; or the ashes of it burnt when applied with vinegar or oxycrate; and in like manner the ashes of cork burnt in an Italian earthen vessel. But astringent epithemes applied externally are beneficial; and cataplasms from dates and quinces, containing also pomegranate rind, or the tops of bramble, or acorns of the holm oak, or the leaves of lentisk, wild pomegranate flowers, acacia, hypocistis, galls, or alum; but more particularly the following: Taurocolla is macerated in oxycrate until it is dissolved, and is then spread upon a strong rag, and glued to the loins. The agglutinative plasters are also powerful remedies, such as the Harmonium, Icesium, Athena, Melinum, Indicum, and the like. Pessaries are to be used for the hemorrhage; mixing the inner part of galls powdered and rosemary with water, apply; or the flowers of the cultivated pomegranate, or the sweet pomegranate in like manner, or powdered knotgrass. The following is a com-

pound one: Of fissile alum, of the inner part of galls, of the juice of acacia, of manna, of each, dr. iv; the yelks of four roasted eggs; these powders are rubbed with the juice of plantain, and mixed. In using it a pessary of wool is impregnated with it, dipped into rose-oil, and applied. And dry-cupping by large instruments applied frequently under the nipples acts powerfully by revulsion. The following is a composition for a hip-bath, in which a person having hemorrhage may sit: Of the heads of sharp rush, of myrtle, of roses, of the leaves of rhamnus, of bramble tops, equal parts; boil in water, which let the patient use for a hip-bath.—*Another:* Of the bark of sweet pomegranate-root, of myrtle, of the rind of cypress, of each, p. iij; of galls, p. j; boil in a sufficient quantity of water. Inject with an uterine syringe the decoction of plantain, or of endive, or of knotgrass, or of nightshade, or of perdicium, or of fleawort, or of hypocistis, or of acacia; and let these things also be applied with wool, or by the finger, or a speculum, or a long-shaped feather, to the mouth of the uterus. And the trochisk of Andron, when injected by an uterine syringe, with some of the decoctions formerly mentioned, or with astringent wine, is an active remedy.

COMM. COMMENTARY. Aëtius gives a very full account of these complaints, but nearly in the same terms as our author. He condemns the practice of applying sponges soaked in cold posca, because, he says, they prove injurious to the uterus by producing too much coldness. Galen remarks that pregnant women have sometimes discharges of blood from the veins of the os uteri. We can attest the correctness of this statement.

Oribasius and Actuarius treat these complaints like our author.

Octavius Horatianus directs us to subject the parts to the vapours of such astringent articles as pomegranate-rind, roses, and galls; or to apply to the parts a sponge soaked in posca, or wool squeezed out of some of the styptic juices. He also recommends us to produce revulsion by means of cupping-instruments applied to the breasts. He further directs us to apply to the parts epithemes of astringents, especially Theban dates boiled in wine or vinegar.

Moschion gives a very sensible account of uterine hemor-

rhages, for which he recommends perfect quietude and sponging with cold water and vinegar, or if that fail, with astringent decoctions, &c. COMM.

Soranus, in like manner, gives a very accurate detail of the symptoms and treatment of uterine hemorrhage.

Rhases recommends venesection (but does not point out the cases in which it is applicable); astringent trochisks containing the recrementum ferri; cupping-instruments applied to the breasts; stuffing the vagina with wool smeared in the mixture of frankincense, wild pomegranate-flowers, galls, antimony, acacia, and alum. He also recommends epithemes, and when these things do not succeed, pessaries made with escharotics. In uterine hemorrhage after delivery, he recommends cold astringent applications, and bandages to the extremities. Haly Abbas correctly remarks that uterine hemorrhage sometimes proceeds from plethora of the system, in which case he properly recommends bleeding. When connected with thinness of the blood, he recommends incrassant food. He also makes mention of the usual astringent applications consisting of galls, vinegar, and the like. Serapion and Alsaharavius lay down similar rules of practice. Avicenna, however, is the fullest of the Arabian authorities upon menorrhagia. Like Haly, he states that it sometimes proceeds from plethora, when he recommends us to produce revulsion by bleeding at the arm. When connected with debility, he prescribes astringents. When it proceeds from ulcers, he approves of a combination of agglutinative, astringent, and narcotic medicines. His general treatment during an attack is almost the same as that recommended by Paulus. He mentions acidulated water, vinegar, camphor, alum, galls, &c. Some of his prescriptions contain opium, which is an anticipation of the modern practice in such cases.

SECT. LXIII.—ON THE FEMALE FLUX.

This is a defluxion of the uterus, by which the whole body is purged. Wherefore that which is evacuated is of the same colour as the prevailing humour. It is red when from the ichorous part of the blood; white, from phlegm; pale, from bitter bile; and black from black bile; and sometimes it is watery.

If the blood is discharged pure as in venesection. we must attend carefully, lest there be any erosion of the uterus. The flux is recognized by the following symptoms: The parts are moistened with fluids of various colours; the patient is pale; is not nourished; and loathes her food; and is affected with difficulty of breathing when she walks; her eyes are swelled; and the discharge sometimes is accompanied with pain, and sometimes without it; with ulceration or without it; and the ulceration is inflammatory, foul, or clean. Wherefore, when the affection is of a humid nature, we must endeavour to remedy the general system by administering such things as are desiccants, without being manifestly of a heating nature. The whole body is to be rubbed, and anointed with honey properly boiled, and we must give diuretic medicines, such as water in which asarabacca and parsley have been boiled, and evacuate the whole body by the bowels. In addition to these, purslain when eaten, and the juice of it when drunk, are beneficial. Also the flowers of the wild pomegranate, the fruit and flowers of bramble, that part of an oak which is under the membranous part of the trunk, and that which is below the peel of the acorn. Horse-tail in particular stops a red discharge, when drunk with water or wine; or hypocistis; the fruit of lentisk sodden with wine and drunk; Samian aster, Lemnian earth, the rennet of a hare, or of a kid, or of a lamb, or of a calf, or of a stag; grape-stones triturated, myrtles, dried unripe grapes, the bark of the pine, and those things recommended for uterine hemorrhage, unless the most drastic. When the flux is attended with pain, we must inject with an uterine syringe, or clyster instrument, the juice of alica, or of ptisan, or of tragus, or of rice, with some of the anodyne medicines. And during the exacerbations we must soothe; but during the remissions (for it has its periods) we must try to alter the system by different kinds of gestation, walking, vociferation, anointing, cupping, dropaces to the parts above, insolation, friction, depilatories, detergent ointments, sinapisms, emetics from radishes, a restorative regimen, baths, wine, and variety of food.

COMM. COMMENTARY. By the term *female flux*, Ruffus describes the complaint now called the *whites*: but our author applies it to any vitiated state of the menstrual discharge.

Hippocrates has given a very good description of the symptoms which sometimes attend leucorrhœa, namely, swelling of the face, paleness of the countenance, enlargement of the belly, anasarca of the limbs which pit upon pressure, short breathing, debility, and so forth. He admits the difficulty of curing such complaints, but directs it to be attempted with diuretics, epithemes, masticatories, a desiccative diet, and exercise. He details many interesting histories of the complaint. COMM.

The account which Aretæus gives is nearly the same as our author's. It is sometimes, he says, attended with a white discharge, and sometimes with a red, of which there are several varieties. It occurs at irregular periods, and in some instances when it continues long it will prove fatal by hemorrhage. The symptoms are various according to the nature of the discharge. His chapter on the treatment is lost.

Aëtius has treated of the red flux and of the white separately. When the discharge is red, he begins with venesection, and then applies to the parts sponges soaked in astringent decoctions, the preparation of which he has described at great length. When the discharge is white, he recommends gestation, vociferation, walking, friction, and applications which are both astringent and detergent. Galen correctly remarks that women of a loose phlegmatic habit of body are most subject to the whites.

Oribasius and Nonnus are little different from our author.

Octavius Horatianus approves of an astringent and desiccative regimen. His advice is to produce vomiting frequently with radishes, to use exercise gradually increased, to change the air frequently, and to apply depilatories, calefacient plasters, and sinapisms to the part. If the discharge is copious, and attended with pain, he advises bleeding.

Eros recommends fumigations with the vapours of various herbs, after which calefacient oils are to be applied upon wool to the part.

The works of the Arabians contain nothing remarkable on this head. Haly Abbas recommends venesection when the discharge is bloody; but, if it consist of other humours, he directs us to administer medicines which promote their discharge; and also to use astringent and stimulant pessaries. Alsaharavius recommends the same medicines, and likewise in particular the warm bath.

SECT. LXIV.—ON INFLAMMATION OF THE UTERUS, AND CHANGE OF ITS POSITION.

Inflammation of the uterus takes place from several causes; for it may arise from an injury, from retention of the menses, from cold and inflation, not unfrequently from abortions, and from parturition after a misconception. Inflammation of the uterus is accompanied with acute fever; pain of the head and tendons, of the balls of the eyes, of the wrists and of the fingers; retraction of the neck, and retroversion; sympathy of the stomach; and the mouth of the womb is shut up; the pulse small and dense. If the inflammation be weak, they have not violent pain in the uterus; but if it be strong, the pain is of the pulsatory kind, which, when the whole of the uterus is affected, darts through the whole of it, but when the inflammation is confined to a spot, the pain indicates the seat of it. When, therefore, the posterior parts only are inflamed, the pain is in the loins, and hardened lumps of fæces are confined by the compression of the rectum; but when the anterior parts are affected the pain is seated at the pubes, and there is strangury or dysuria from pressure on the bladder. When the sides are inflamed, there is tightness of the groins and heaviness of the limbs; but when the fundus is affected the pain is principally near the navel, with swelling thereof; and when the inflammation is in its mouth there is pain in the hypogastrium, and if the finger be introduced *per vaginam*, the mouth of the womb will feel hard and unyielding. As to the treatment we must, in the first place, use embrocations of wine and oil, or of wine and rose-oil to the pubes and loins, by means of folds of clean wool without a bandage; and abstinence from food is to be persevered in for three days, after which we are to let blood from the arm, if nothing contraindicate. The patient is to be supported with chondrus out of honied water, bread, or soft eggs, every alternate day. But after the fifth day we are to apply a cataplasm made of fine flour, linseed, or fenugreek, with honied water, in which the heads of poppy have been boiled and thrown away, and oil along with them. But if the inflammation be of an erysipelatous nature, and cannot endure heat, boil melilot in must, and having pounded, add the yelks of roasted eggs, with rose-oil, oil of apples, or of saffron, and

apply as a cataplasm; or having boiled dates in diluted wine, pound with fine polenta, and some of the afore-mentioned ointments, and apply as a cataplasm; and when the complaint is on the decline add the cerate of nard or of privet. Throughout the whole treatment the patient must sit in hip-baths prepared from the decoction of fenugreek, linseed, mallows, mugwort, and oil; and those who cannot bear these heating things must use rose-oil dissolved in hot water. Recourse must be had to pessaries, and injections prepared from the sordes of unwashed wool and butter, stag's marrow, the grease of geese, the ointment called Susinum, and Tuscan wax. When the patients can endure heating things, the pessary called the Golden will suit with them, and the Enneapharmacus; but when they cannot endure heating things, the pessaries are to be prepared from eggs, rose-oil, the fat of geese, or of domestic fowls. For inflammations attended with a greater degree of heat, melt diachylon-plaster in a double vessel with rose-oil, and add the juice of plantain, or of endive, of succory, or of intybus. Or use the following: Of the fresh fat of geese, or of swine, dr. iv; of the cerate of roses, or of the Susinum, oz. ij; of the yelks of roasted eggs, oz. j; of saffron, dr. j; of myrrh, three oboli; of opium, two oboli; or, instead of opium, the decoction of poppy-heads. When the pain is great, give poppy-juice (*opium*) to the size of a lentil, with woman's milk, or the juice of fenugreek, as an application *per vaginam*. For inflammation with hardness, dissolve the ointment called Tetrapharmacum in rose-oil, and introduce or inject. And when there is derangement of the position of the uterus, it is to be treated like inflammation during the violence of the attack; but, during the remissions or decline, emollients are to be applied; and when the complaint is protracted, alteratives (*metasyncritica*) are to be used. But if there is hardness externally, we must have recourse to malagmata; that from melilots, that of Mnaseus, the Icesian, that from apples invented by Serapion, and that from wheat. The diet at first should be light; but when the complaint begins to decline the patient may use the bath, and take a more varied and generous diet.

COMMENTARY. Aëtius has given from Philumenus a very circumstantial account of the symptoms and treatment of inflammation of the uterus; but, upon the whole, it is little different from COMM.

COMM. our author's. He also gives, from Aspasia, a fuller account of displacement of the uterus. Without doubt he alludes to retroversion and anteversion of the uterus, as they are called in modern works on midwifery. These cases generally occur in the first months of pregnancy, but there are instances of their happening in the unimpregnated state. (See Burns' Midwifery, i, 19.) The symptoms, as described by Aëtius, are sufficiently well marked; retention of the fæces, owing to the rectum being obstructed by a tumour; pains in the region of the pubes, and sometimes retention of urine. He directs us to draw off the water by means of a catheter, and to bleed, give emmenagogues, and apply pessaries according to circumstances. Avicenna and Haly Abbas make mention of displacement of the womb, but they appear to have derived all their information from Aëtius.

We shall give a brief outline of Serapion's treatment in cases of uterine inflammation. He properly begins with bleeding first from the arm, and afterwards at the ankle. He then gives a laxative medicine, and applies a plaster to the region of the uterus. When the complaint is at its acme, he directs us to use fomentations prepared by adding sedatives to such medicines as pomegranate-rind, endive, fleawort, fenugreek, chamomile and dill. When the inflammation does not abate, he directs us to encourage suppuration by the combination of maturative with calefacient medicines, such as a plaster containing fenugreek, barley-flour, figs, pigeon's dung, &c. Haly's plan of treatment is little different: General bleeding according to circumstances; cooling draughts composed of purslain, violets, spinage, &c.; plasters of violets, camphor, &c.; hot baths prepared with melilot, mallows, linseed, &c. When there is heat in the parts, he directs us to introduce oil of roses, with the whites of eggs, the grease of hens, &c. to which opium may be added. When the pain is violent, he particularly recommends cooling injections. Alsaharavius recommends bleeding from the arm and at the ankle, diluent and cooling draughts, local applications containing opium, seed of fenugreek, plantain, house-leek, &c. and the tepid bath.

Rhases says that when the womb is displaced, there is vehement pain with distension of the parts; the woman cannot rise nor sit but with difficulty; the urine is retained and sometimes

the fæces. He directs us to restore the uterus to its position by drawing its mouth in the opposite direction. Displacement of the womb is also briefly noticed by Hippocrates (de Morb. Mulier. i); by Dioscorides (Meth. Med. i, 37); and by Soranus (Ap. Phys. et Med. Min. ed. Ideler, 256.) COMM.

Many of the ancient authorities describe the uterus as consisting of two cavities, separated from one another by a membrane. See, in particular, Theophilus (Comm. in Hipp. Aph. ii, 469, ed. Dietz.) Galen, however, would appear to have been better informed (t. v, 789, ed. Kühn.) The uterus, moreover, is correctly described by Soranus (Ap. Phys. et Med. Min. 256), and by Moschion. (vi.)

SECT. LXV.—ON ABSCESS OF THE UTERUS.

When the inflammation is converted into abscess, all the symptoms formerly mentioned become more intense; and, besides, there are irregular attacks accompanied with rigor, which at first are attended with intense pain; but when suppuration has fairly taken place, there is some remission of it. About the time of the abscess' bursting, the pains, however, become more keen and seem to attack in a pungent manner; the fevers formerly slight become more oppressive; sometimes there is obstruction of the urine, and sometimes of the fæces, occasioned by the pressure of the affected part of the uterus. Sometimes there is swelling in the region of the pubes, and a sense as it were of fluctuation, when the abscess is large. Abscess in the more exposed parts is discovered by means of the surgical instrument called dioptra, or the touch of the finger, and from the pains being more violent, owing to the nervous nature of the mouth; as when the collection is in the fundus and vagina it is attended with less pain, and no swelling is felt heavy upon the finger, and the mouth of the womb appears less tumid. Wherefore we must promote suppuration by cataplasms of fenugreek, linseed, barley, or wheaten flour intermixed with boiled figs, and sometimes with pigeons' dung. Let the patient often use the hip-baths recommended for inflammation, and pessaries of turpentine, myrrh, grease of wool and butter. When the abscess bursts, if the matter pass to the bladder, we must give milk to drink, and

draughts from the seeds of cucumber; but if it is discharged into the rectum we must throw up injections of lentils and pomegranate-rind. But if it burst into the womb, provided the pus be pure, we may inject rose-oil, or whitened oil, or the ointment composed of four ingredients, which is called basilicon, or fresh butter; but if a thin fetid ichor is discharged, as from a spreading ulcer, we must use an astringent injection of myrtles, dates, and dried lentils; and after the discharge of the humours, if there be inflammation, we must persevere with the cataplasms and hip-baths. When the aposteme is seated about the mouth of the uterus, and does not burst, after the parts which cover the pus have become thin, we must endeavour to procure the evacuation of the pus by a surgical operation, as will be explained in the Surgical part of the Work.

COMM. COMMENTARY. Our author abridges the account given by Aëtius, but has omitted some things of importance. Aëtius directs us, when the abscess is forming, to apply fomentations by introducing a piece of sponge into the vagina, and to steam the uterus by means of a tube calculated to convey the fumes to it. When the pain is violent, poppy-heads are to be added to the cataplasms. The poppy is an ingredient in several of the cataplasms mentioned by Serapion. Avicenna's treatment is perfectly similar. Oribasius remarks that an abscess may burst by the os uteri, the bladder, or into the rectum. When it makes its way into the rectum, Haly Abbas prescribes clysters composed of such articles as lentils, pomegranate-flowers, Armenian earth, rose-oil, ceruse, dragon's blood, gum arabic, the yelk of an egg, and vinegar. His general treatment consists of pessaries, plasters, injections into the vagina, and clysters of various cooling and emollient articles.

SECT. LXVI.—ON ULCERATION OF THE WOMB.

The uterus is often ulcerated from difficult labour, extraction of the fœtus, or forced abortion, or injury of the same occasioned by acrid medicines, or by a defluxion, or from abscesses which have burst. If, therefore, the ulceration be within reach, it is detected by the dioptra, but if deep-seated, by the discharges;

for the fluid which is discharged varies in its qualities. When the ulcer is inflamed, the discharge is small, bloody, or feculent, with great pain; but when the ulcer is foul, the discharge is in greater quantity, and ichorous, with less pain. When the ulcer is spreading, the discharge is fetid, black, attended with great pains, and other symptoms of inflammation; irritation is produced by relaxing medicines, and relief by the opposite class. When the ulcer is clean, the fluid is small in quantity, consistent, without smell, thick, white, with an agreeable sensation. When the ulcer is inflamed, we must use those things recommended for inflammations. When it is foul, we must inject the juice of ptisan with honey, or basilicon ointment with the oil called Susinum; or honied water, having fenugreek, mallows, bran, or lentil without its husk, boiled in it; and in order to clean it the more, horehound or vetches may be added; or mixing with honey the flour of vetches, or iris, or round alum, or the like, we may inject them; and externally we may apply cataplasms of the same things mixed with honied water. And this medicine is particularly applicable: The finest saffron is triturated with a woman's milk, and being added to rose-cerate with the grease of a goose, is rubbed upon flocks of wool. But the following is a more effectual application, and one proper for violent pains: Poppy-heads are mixed in diluted must for three days, and then boiled until they become soft; then rose-leaves, dr. v, and saffron, dr. iij, are pounded together, and the decoction of the poppy-heads mixed with them; then wax, dr. ij, melted with rose-oil, are poured on them, and applied on a pessary, anointing with rose-oil. The same good effects may be derived from the preparation of eggs, saffron, rose-oil, the grease of a goose, and stag's marrow. And the Egyptian ointment without the verdigris answers admirably for the cure of ulceration. When the ulcer is spreading and attended with inflammation, we must apply a cataplasm of warm bread mixed with hydromel, oil, marshmallows, fenugreek, and fatty dates. We must inject also the juice of plantain, of nightshade, of knotgrass, and of endive, first by themselves, but afterwards with austere wine or vinegar. When the ulcer spreads and is without inflammation, we may inject more tonic remedies, such as the decoction of pomegranate-rind, of roses, of olive shoots, of cypresses, of quinces, of bramble, of myrtles, of lentisk, of buckthorn, of sumach, in astringent wine, and afterwards

with alum, acacia, lycium, and hypocistis. A hip-bath is also to be prepared from these decoctions. When these things do not succeed, we must use an injection, at first of paper with oxycrate, and then of vinegar, or of the powder called anthera, or of chalcitis, or of copperas, in the same liquids; or of the remedies for dysentery. We must allow wholesome food in small quantities. When the ulcer has become clean, we must bathe more frequently, administer food freely, and give wine, so that the body may soon recover its flesh. In place of a pessary, we may inject the preparation from mulberries, mixed with calamine, Cretan cistus, or plumbago. Externally we may apply the epulotic plaster to the abdomen and loins; for the powers of cataplasms, as well as those of plasters, may be thus communicated by the insensible pores of the skin.

COMM. COMMENTARY. Our author has described the treatment of ulcers in the womb so fully and judiciously, that little of importance can be added to it. It is mostly compiled from Aëtius, who, in his turn, professes to have copied from Archigenes, Aspasia, and Asclepiades.

Aretæus says that of ulcers in the womb some are broad, attended with pruritus and a discharge of thick matter without fetor. These are not dangerous. But when the discharge is thin, ichorous, and fetid, when the lips of the sore are callous, and when it spreads like a phagedenic ulcer, it is of a malignant kind. His chapter on the treatment is lost.

Unfortunately there is also a hiatus in the text of Celsus, which detracts from the value of his account.

Octavius Horatianus recommends a potent remedy for putrid ulcers of the uterus which supervene upon wounds. It is a trochisk formed of arsenic, quicklime, sandarach, burnt paper, and the like. Although the case recently reported of the man who killed his wife, by introducing into her vagina the oxyd of arsenic, ought to teach us caution, we can certainly conceive that such an application, if properly managed, might prove safe and effectual. It ought also to be kept in mind that the orpiment of the ancients was less virulent than the arsenic of the moderns.

Scarcely any additional information is to be learned from the Arabians. The following application recommended by Avicenna

seems to be a judicious one: Take equal parts of litharge, ceruse, and sarcocolla; make a cerate with wax and rose-oil. When the ulcers are attended with a bloody discharge, Haly Abbas directs us to use pessaries and injections of an astringent nature, consisting of galls, hypocistis, plantain, rose-oil, and the like. When the discharge is whitish and purulent, he recommends the tepid bath and injections of barley-gruel, honey, &c. For relieving the pain he recommends an ointment containing litharge, frankincense, axunge, fresh butter, strained wax, and rose-oil. Alsaharavius recommends similar remedies. COMM.

SECT. LXVII.—ON CANCER.

Of cancers in the womb, some are attended with ulceration, and some are without it. In those cases in which the part is not ulcerated, a tumour is found about the mouth of the womb, hard, unequal, callous, of a feculent colour, and red, but sometimes also somewhat livid; and they have violent pains in the groins and abdomen, the lower part of the belly, and the loins, which are exasperated by handling and complicated applications. When the cancer is ulcerated, in addition to the pains, hardness, and swelling there are phagedenic and unequal ulcers to be seen, which for the most part are foul, callous, white, and having ugly scabs on them; but some appear clean, some feculent, or livid, or red, or bloody. The discharge from them always is a thin ichor, watery, black, or tawny, and fetid; but blood also is sometimes discharged along with the other symptoms of an inflamed uterus already mentioned. Wherefore the complaint is incurable, as Hippocrates has pronounced, but may be alleviated by hip-baths from fenugreek, and mallows, and by cataplasms of a like nature. And the exacerbations of the complaint may be much alleviated by common mallows, or marshmallows, softened by boiling in honied water, and pounded with a little rose-oil, and applied; and by a cataplasm of dried figs and melilots, rue, frankincense, and navew bruised carefully with oil, and also by that from dates boiled in must, containing also the yelks of eggs, and fine flour; or that from poppies with coriander, knotgrass, or endive. These things are to be applied during the violence of the pains; after which a cerate may be applied from rose-oil,

or myrtle-oil, or the oil from the flowers of wild vines, or that of apples with dates boiled in must. But one particularly recommended is that from the sediment found in copper vessels, which being burnt, is reduced to a powder, and mixed with the cerate of roses until it acquire the consistence of a plaster. These are the external applications. But oil applied internally is soothing to the parts. And when they become ulcerated, the milk of a woman may be injected, and the tepid juice of plantain. But if they bleed, the infusion of knotgrass with a little rosemary proves soothing; and so also do pessaries medicated with saffron, women's milk, and the juice of poppies, and the sordes of unwashed wool. But the following is one of the best applications, and answers also for affections of the anus: Of washed Italian litharge, oz. vj; of male frankincense, of the sordes of unwashed wool, of fresh axunge, of newly-made butter, of Tuscan wax, of each, oz. ij; of rose-oil, oz. iv; triturate the litharge with the juice of endive, and add to the other things when melted. Food of easy distribution and wholesome may be given, and some watery wine; avoiding acrid food and repletion, for they are apt to be troubled with indigestion.

COMM. COMMENTARY. Hippocrates (de Morb. Mulier. ii, 24) gives a long account of cancer of the womb, which, when fairly formed, he pronounces to be utterly incurable. He directs us, however, to try the effect of fumigating the womb by introducing into it a pipe attached to a pot. Steams from garlic and the fat of seals are to be applied in this manner.

Aëtius gives from Archigenes exactly the same account as our author.

Aretæus describes the ulcerated cancer, and that kind in which there is no ulceration. He calls them chronic and fatal diseases.

Haly Abbas pronounces the disease to be incurable, but directs us to soothe the sufferings of the patient by various anodyne preparations. For this purpose he gives directions for the formation of several pessaries and injections, the principal ingredients of which are linseed, chamomile, fenugreek, coriander, beet, poppies, and the like. Alsaharavius also approves of such anodyne applications. Rhases enjoins abstinence from everything of an acrid nature, and such articles as engender black bile.

We will see the treatment of cancers in general detailed in the Fourth Book. COMM.

SECT. LXVIII.—ON SCIRRHUS AND SCLEROMA.

The uterus becomes scirrhous, sometimes all at once without any preceding complaint, but most frequently after having been preceded by inflammation, which has neither been resolved nor converted into an abscess. The disease called scleroma is a species of scirrhus, most frequently forming about the neck of the womb, and having also some swelling, but less resisting, and attended with moderate pain. These are accompanied with displacement to the opposite parts, swelling powerfully resisting in proportion to the pain, with heaviness and difficulty of motion, not of the limbs only but of the whole body, and aversion to exertions. When not properly cured, a dropsical cachexia supervenes. In the commencement we must have recourse to venesection, or purging with the hiera of Archigenes; then to cataplasms of dried figs, grease of wool, nitre, or wormwood, and cupping with scarifications; and to the soothing ointments (*malagmata*), namely the Polyarchium, that from seeds, and that from bay-berries; to hip-baths prepared with the decoction of dried figs, mugwort, pennyroyal, and marshmallows; to pessaries of turpentine, galbanum, myrrh, iris, and the grease of wool; to dropaces and the use of the natural baths, namely, the nitrous and bituminous. When the strength permits, a course of hellebore may also be tried.

An emollient pessary. Of Pontic wax, of nard ointment, of each, oz. ij; of the ointments of iris, that of privet, and that called Gleucinum, of each, oz. ij; of the grease of bears and geese, of butter, of the sordes of unwashed wool, of stags' marrow, of turpentine, of each, oz. j.—*Another:* Of poley, dr. ij; of myrrh, dr. iv; having triturated with Mindesian wine, and mixed it with Irinum, give to be applied.—*Another:* Of Tuscan wax, of the fat of calves, of turpentine, of stags' marrow, of Attic honey, of old oil, equal parts. The following is an alterative which answers also for inflation: Of the dried white grape without its stones, oz. iij; of the leaves of the green rue, oz. ij; of sea water, oz. iss; of cumin, dr. iv; of honey, q. s.; having

anointed the pessary, dip it in the oil of privet, and apply. And the pessary called golden, the Libanian, and the Enneapharmacus suit well with this affection; but the Titian is more particularly applicable.

COMM. COMMENTARY. Our author's account of these diseases is taken from Aëtius, who professes to copy from Soranus the Methodist. None of the other authorities has treated of them so fully. Bernard justly remarks (ap. Nonni Ep. 208) that if the ancients had not been familiar with *inspectiones cadaverum*, they could not have described the diseases of particular parts of the uterus so accurately as they have done. Actuarius briefly states that scirrhus of the uterus is to be treated by applications of a digestive and emollient nature, namely, emollient oils and fats, mixed with such things as galbanum, bdellium, and the like.

Of the Arabians, Avicenna is the most minute, but his treatment is borrowed from the Greeks. Haly Abbas remarks that scirrhus has a tendency to terminate in dropsy, and it is attended with sallowness, weakness, loss of appetite, amenorrhœa, swelling of the breasts and belly. His remedies are similar to those for cancer.

See an interesting account of this disease by Lodovicus Mercatus (ap. Gynæcia, 951.)

SECT. LXIX.—ON THE MOLE.

The mole, too, is a scirrhous tumour, forming sometimes at the mouth and sometimes in the body of the womb, conveying to the touch the sensation of stone, and being attended with retraction of the parts above, and emaciation, paleness, loss of appetite, retention of the menses, and swelling of the breasts, so as in certain cases to raise suspicions at first of a conception; but in process of time the true nature of the complaint is developed. Sometimes also it raises suspicions of dropsy, from which it is to be distinguished by the hardness of the swelling, and from there being no sound of water when tapped by the fingers, as is the case in dropsy. In certain cases, however, the disease actually terminates in dropsy, which for the most part proves incurable. In some cases, it also brings on a dis-

charge of blood. In general, therefore, it is proper that the patients should lie in a small, dark, and moderately cool house, upon a firm couch, with their feet raised, and in a state of quietude; for motion provokes discharges of every kind. And the swelling and hardness are to be cured by the remedies which we have mentioned for scirrhus and scleroma of the uterus; dropsical effusions by those recommended for dropsy; and hemorrhages by those for the flux. Some call by the name of mole an unorganized mass of flesh which forms on the coats of the womb, and is delivered like the fœtus. This species is to be managed by a relaxing treatment, so as to be speedily discharged.

COMMENTARY. By the first species of mole, fibrous tumour of the ovaria and perhaps also scirrhus of the neck of the womb are meant to be described. The other species is now well understood, and is described by many ancient authors. See an account of it at the end of Aristotle's 'History of Animals;' also Pliny (H. N. vii, 15, and x, 64); Hippocrates (de Steril. xx); Plutarch (t. i, 252, ed. Xylander); Nonnus (212); Rhases (ad Mansor. ix, 88; Cont. xxii); Moschion (de Morb. Mul. 125); Actuarius (Meth. Med. i, 56.) Galen and Avicenna agree in representing the true mole as a corruption of the male semen, and consequently they believed that it never occurs in virgins. Hanneman and other modern authorities maintain the contrary. See 'Dissertations on the Mole' by Van Swieten (Comment. 1326), by Ambrose Paré (de Hom. Genit. xxxiii), by Martinus Akakia (ap. Gynæc. 773), by Lodovicus Mercatus (ap. Gynæc. 1013), by Leonardus Jacchinus (Comment. in Rhasis, ix, 71), and by Ruysch (Anat. Chirurg. Cent.) COMM.

Aëtius gives an account of the former species, but it is little different from our author's. He recommends, in the first place, emollient applications of all kinds, namely, baths, pessaries, and fumigations, and afterwards dropaces, sinapisms, and the like. The same plan of treatment is pursued by Avicenna. Haly Abbas and Alsaharavius describe the two species of mole in exactly the same terms as our author. Rhases also describes the two species of mole, namely, the one which is hard and round, and the other or soft species to which the name is now generally restricted.

COMM. Hippocrates relates a curious case of a calculus which was discharged from the uterus of a woman sixty years old, who had long felt pain in that region *dum venere uteretur*. Aëtius also makes mention of the uterine calculus. Lodovicus Mercatus gives a curious account of this subject (Gynæc. 969.) Michaelis Angelus Morus relates a singular case of a woman who died of uterine calculi. (Mangeti Bibl. Chirurg. xviii.)

SECT. LXX.—ON INFLATION OF THE UTERUS.

The uterus becomes distended with air from cold, from abortion, or difficult parturition: its mouth being shut up, or a clot of blood being fastened in it. The air is sometimes contained in the cavity of the uterus itself, and sometimes in the pores of its body. These cases are attended with swelling about the pubes and hypogastrium, with hardness, and a pungent pain, shooting as far as the diaphragm, the stomach, and the groins. When tapped with the fingers it sounds like the swelling of tympanitis. Wherefore it is to be cured, in the first place, by venesection, if nothing prohibits its use; and then, during the exacerbations, by abstinence from food; by embrocations with oil of rue; by hip-baths of the decoction of rue, of pennyroyal, of mugwort, of cassia, and the like; by cataplasms from the seeds of parsley, of cumin, of fennel, of anise, of bishopsweed, and of the flower of iris; by dry cupping, and cupping with scarifications. But when the complaint is protracted, we must have recourse to purging with the hiera picra, dropaces, sinapisms, and the use of the natural baths. Let the midwife introduce her finger well oiled, and extract gently, if possible, the thrombus lying in the womb, by breaking it down, and then apply a cataplasm of figs, of nitre, and of wormwood. Emollient epithemes should be used, such as the Polyarchian, that from seeds, and that from bayberries. The pessaries should consist of rue, honey, and nitre; but the following one will be particularly applicable: Of fat figs pounded, dr. j; of cumin, dr. ij; of aphronitrum, dr. j. But, owing to its acrimony, let it be previously dipped in milk. Emollient pessaries are also proper.

COMMENTARY. This complaint is mentioned by Hippocrates (Epidem. vii), and by Galen (Meth. Med. xiv, 7, and de Causis Sympt. iii, 2.) Our author's account of it is taken from Aëtius. Octavius Horatianus and Nonnus direct similar applications, only the former says nothing of bleeding. Haly Abbas, in like manner, omits venesection, but recommends applications consisting mostly of carminative substances, such as parsley, birthwort, dill, rue, and fennel. They are to be used in the form of baths, fomentations, and injections. Alsaharavius recommends bleeding, anointing the womb with oil of rue, baths prepared with rue, chamomile, mace, cumin, &c. cupping-instruments applied to the pubes, and so forth. Avicenna and Rhases refer to Aëtius and Paulus, and treat of the complaint in like manner. COMM.

See a full account of this disease by Lodovicus Mercatus (ap. Gynæc. 944.)

SECT. LXXI.—ON UTERINE SUFFOCATION, OR THE HYSTERICAL CONVULSION.

Uterine suffocation is a rising up of the uterus, affecting sympathetically the most important parts, as the carotid arteries, the heart, and the membranes of the brain. The patients experience, when the attack is at hand, languor of mind, fear, atony of the limbs, paleness of the countenance, and sadness of the eyes; and when the suffocation comes on there is deep sleep, mental aberration, loss of the senses and of speech, with contraction of the limbs; the cheeks then begin to redden, and the countenance becomes turgid; but when the attack is going off, some moisture is to be felt about the genital organs; and rumbling of wind in the intestines precedes the remission. The uterus is then gradually relaxed, and thus they recover their understanding and senses. The disease comes on periodically like epilepsy, and is occasioned by the uterus being gorged, or from semen or some other matter having become putrid in it. Of those attacked with it the greater number speedily recover, but some die suddenly during the paroxysms, their pulse becoming dense and palpitating irregularly, and then asphyxia taking place; a little perspiration bedewing the surface of the body; and the respiration being at first feeble but afterwards

becoming completely stopped. This affection attacks most frequently in winter and autumn, especially young women who are prone to venery, the barren particularly, if their sterility be brought on by medicines, and others of a cold nature. During the paroxysms, therefore, ligatures are to be applied around the extremities, and the limbs and whole body rubbed as for the recovery of persons in deliquium animi. Things of a strongly fetid smell are to be applied to the nose, such as an extinguished lamp, castor, liquid pitch, gum vernix, burnt wool and rags. Some have even brought close to the nose a chamber-pot containing stale urine or feces. It answers well to apply a cupping-instrument to the groins and hypogastrium, with great heat, either performing dry cupping or cupping with scarifications. When the complaint is protracted, carminatives will prove useful, such as collyria introduced into the anus, or cumin and nitre with honey. Hardened feces may also be discharged from the bowels by means of clysters, lest by their presence they occasion pressure; and, in order to draw back the uterus to its situation, fragrant ointments are to be injected into the parts, such as those of marjoram and Indian leaf. Mustard may be applied to the nose and likewise to the feet, in the form of a cataplasm. One should call aloud to them in a shrill tone of voice, and rouse them thereby; and sternutatories of castor, fuller's herb, and pepper may be applied. When the paroxysm remits we may compel them to vomit, and keep them from food altogether or allow them but little. After the seventh day we must purge them with the hiera from colocynth. After the third, we must apply cupping-instruments to the loins and flanks, and then we may give a draught of castor, sometimes in a decoction of mugwort and sometimes in honied water; for in some cases this alone is sufficient for a complete cure. But hip-baths and emollient pessaries are also to be applied. Such is the treatment for the paroxysms; but for the recovery of the general system, we begin with venesection and proceed to purging with hiera, and then give the medicine called picra from aloes to the amount of dr. j, with three cupfuls of honied water in succession, or dr. ij with six cupfuls at intervals. Dropaces, cupping, and sinapisms must also be used, and the acopa from euphorbium; then exercises, friction, vociferation, and, last of all, the use of the natural baths.

COMMENTARY. See Hippocrates (de Nat. Muliebri) : Galen (sec. loc. ix. de Loc. Affect. vi. 5) : Aretæus (Morb. Acut. ii, 11) ; Celsus (iv. 20) ; Moschion (de Morb. Mul. 129) ; Eros (ap. Gynæcia) ; Aëtius (xvi, 78) ; Oribasius (Synops. ix, 47) ; Leo (vi, 20) ; Actuarius (Meth. Med. iv, 8) ; Nonnus (210) ; Alexander Aphrodisiensis (Probl. ii, 64) ; Serapion (v, 27) ; Avicenna (iii, 20, iv, 16) ; Haly Abbas (Pract. viii, 12 ; Theor. ix, 30) ; Alsaharavius (xxv, 2, 12) ; Rhases (ad Mansor. ix, 87, and Contin. xxii.) COMM.

From the days of Hippocrates to those of Actuarius, and long afterwards, the hysterical convulsion was accounted for in the manner explained by our author. It accords not well with modern ideas upon the subject ; and provided it be admitted as a fact that men are sometimes, though rarely, seized with hysterical convulsions, there can be no doubt but the ancient hypothesis must at once fall to the ground. Perhaps a stickler for the ancient doctrine, while he admitted with Aretæus that men are subject to complaints resembling hysterics, might hold with a late intelligent writer, Mr. Tait, that men are never affected with the real hysterical convulsion.

According to Hippocrates, this complaint most frequently attacks antiquated virgins or young widows. If the womb, he says, ascend to the liver, the patient suddenly becomes speechless, her teeth are fixed, and her colour becomes pale. His treatment consists of applying a tight swath round the middle, giving fragrant wine, applying fetid things to the nose, and fragrant things to the uterus. The belly is to be purged, and castor and fleawort given internally. Herodotus, the historian, mentions that the ancient Scythians used castor for the cure of complaints of the uterus. (iv.)

Galen is at great pains to explain how the uterus is retracted upwards and to the sides by its ligaments, but his explanation is too long for our limits, and therefore we must content ourselves with referring the curious reader to it. (De Loc. Affect. u. s.) He says, in another place, that when uterine suffocation takes place, there is loss of sense and of motion, a small feeble pulse, and sometimes asphyxy. He recommends agaric and plantain in wine ; smelling to bitumen, castor, liquid pitch, cedar rosin, &c. ; fumigating the parts with hartshorn, and applying to them rue and honey upon wool.

COMM. Celsus thus marks the distinction between the epileptic and hysterical convulsion: "Interdum etiam sic exanimat ut tanquam comitiali morbo prosternat. Distat tamen hic casus, eo quod neque oculi vertuntur, nec spumæ profluunt, nec nervi distenduntur; sopor tantum est." If the strength permit, he approves of venesection, or of cupping the groins without scarifications; then fetid things are to be applied to the nose, and fragrant things to the uterus, the whole body is to be rubbed, sinapisms are to be put to the lower part of the belly, and castor, gith, and dill given internally.

Aretæus surpasses every other ancient author in his description of this affection. He sets out with pronouncing the uterus to be, as it were, an animal within an animal, wandering upwards, downwards, and to either side, being attracted by fragrant things and flying from fetid. When, therefore, it ascends upwards, it occasions compression of the liver, diaphragm, lungs, or heart, and sympathetically with the last, also of the carotids. It is accompanied with heaviness of the head and loss of sensibility. Nearly allied to it, but yet a different affection, is a complaint which attacks men, having therefore no connexion with the uterus, and not being relieved by fetid things. He says that, when the attack proves fatal, the pulse sinks and becomes irregular and intermittent, there is a strong sense of suffocation, loss of speech, loss of sensibility, respiration unequal or not even perceptible, sudden and unexpected death. For some time after the countenance does not put on the appearance of death, but is redder than natural, and the eyes project. He also gives a good account of the treatment, which, however, cannot be said to differ in any material respect from that of Galen and Celsus, as explained above. The same may be said of Oribasius, Nonnus, and Octavius.

Aëtius is very minute in his description. He remarks that after respiration by the mouth is stopped, the arteries may continue to beat, as is the case with reptiles in winter. The disease, he says, is occasioned by a flatulent refrigeration, and not by inflammation, as Soranus has said.

Actuarius accounts for the complaint and describes it in the same terms as the preceding writers. As it occurs principally with virgins and widows, he prescribes for them the Hudibrastic mode of wooing widows!

Eros gives the same account of the symptoms and treatment as the others. COMM.

Moschion, however, disapproves entirely of the common practice of applying fetid things to the nose, ligatures to the extremities, and fragrant pessaries to the uterus. On the contrary, he recommends warm fomentations, injections of warm water thrown into the uterus, rubbing the body with warm hands, and when the disease gets into the chronic state, giving alteratives (metasyncritica) and hellebore.

According to Leo, men who have been long restricted from venery are subject to the hysterical convulsion.

See, in Alexander Aphrodisiensis, an ingenious explanation why fetid substances applied to the nose and fragrant ones to the parts below were supposed to prove beneficial in such cases. It is too long for our purpose.

The account which Plato gives of the nature of the uterus and the phenomena of hysterics ought perhaps not to be taken in too literal a sense, considering that philosopher's well-known propensity to mystification. He says, that part in women which is called the womb being an animal desirous of generation, if it become unfruitful for a long time, turns indignant, and, wandering all over the body, stops the passages of the spirits and the respiration, and occasions the most extreme anxiety and all sorts of diseases. (Timæus.)

The Arabians describe and treat the complaint exactly like our author. Serapion says that the uterus is delighted with fragrant things, and flies from fetid, not because it is an animal but from a natural property. He recommends ligatures to the extremities, purging with hiera picra, bleeding if not contra-indicated, the application of fetid things to the nose, and of fragrant things to the uterus, and so forth. Avicenna states that the affection arises from the menstrual discharge or semen being retained in the uterus. Haly Abbas adopts this explanation. He says the uterus affects the brain and heart sympathetically, giving rise to apoplexy, epilepsy, and other serious complaints. Young women, especially widows, are most liable to it. He says it is often periodical like epilepsy. His treatment consists of ligatures to the extremities, with friction, sprinkling rose-water on the face, applying fetid things to the nose, and the other means used in cases of suspended animation. At the

COMM. same time he directs us to apply fragrant things to the parts of generation, and dry cupping to the hypogastric region. This is the treatment during a fit. To remove the tendency to the affection he recommends the warm bath medicated with wormwood, bay-leaves, marjoram, &c. fetid pills, hiera picra, and the like; and when connected with suppression of the menstrual discharge, he directs bleeding at the ankle, or even at the arm, if there be fulness and redness of the face. If the woman is unmarried, he recommends a change of life. Alsaharavius states that there is this difference between the hysterical and the epileptic convulsion, that in the former the woman does not lose her senses nor emit foam at the mouth. Like Haly, he directs us to bleed at the ankle when the menses are obstructed, to apply cupping-instruments to the thighs and hypogastric region, and to take diuretics and emmenagogues. There is nothing peculiarly interesting in Rhases, as his account of the disease is collected from preceding authors. One of them seems to say that the ascension of the uterus is not real but apparent. He remarks that affections of the uterus are attended with pain of the occiput.

SECT. LXXII.—ON PROLAPSUS UTERI.

Prolapsus of the uterus takes place rarely indeed, but from a variety of causes; for it is occasioned either by a woman's falling from a height and pitching upon her bottom, whereby the ligaments are ruptured which keep the viscus in its position; or by the tearing away of the secundines, which drag the uterus along with them when they adhere, as in difficult labour; or by the awkward performance of embryotomy; or by a blow, or mental emotions, such as when the loss of children has been communicated, or an irruption of the enemy, or by a dangerous voyage, or some such cause, by which the uterus has fallen down, owing to a relaxation of the whole system, or owing to paralysis and atony of the parts, which happens most especially to those in the decline of health. It is towards its mouth that it falls down. Some, indeed, have related that the whole uterus has been prolapsed, which is incredible; for how could it have been reduced and fixed in its place? Wherefore, we must first evacuate the hardened fæces by a clyster and bring

about a discharge of the urine, in order that the uterus may be freed from all compression, and then place the patient in a supine position, having her bottom elevated, her thighs bent, and her legs separated; and then take a hasp of wool, in figure and thickness resembling the female vagina, and this being bound round with a slender piece of cloth, and dipped in the juice of acacia, or of hypocistis dissolved in wine, is to be applied to the uterus, and all the projecting part pushed upwards gently, until the whole swelling is restored to the vagina; after which the pubes is to be covered externally with a piece of sponge squeezed out of oxycrate; and the woman is to be laid with her legs stretched out and applied so that the one may lie over the over. After this, cupping-instruments with much heat are to be fixed to the navel and the loins on both sides, and things of a fragrant smell applied. On the third day, while the wool is still remaining in the vagina, let the woman sit in a hip-bath of dark-coloured austere wine slightly warmed, or in a decoction of myrtle, lentisk, and pomegranate-rind. After these things, let the wool be taken away and another fold applied soaked in the medicine. Catapiasms are to be applied externally to the hypogastrium, of dates, polenta, or dried lentils, and pomegranate-rind with oxymel. And every third day let the same thing be done until the cure be completed. But if the prolapsed part cannot be reduced, and mortify in the course of time, we may take it away without apprehending any danger: for they relate that the whole uterus, having become mortified, has been taken away, and yet the woman lived.

COMMENTARY. This complaint is particularly well treated of by the Father of Medicine. He has even described the case of a complete procidentia, when, he says, the uterus hangs down like a scrotum. Hippocrates directs us to make cold applications to the pudenda; to wash the part with an astringent lotion, and restore it to its place. He afterwards gives directions to make the woman lie upon her back with her legs crossed and tied together; and if the disease be likely to return, he recommends cupping and pitching of the hypogastrium. COMM.

Celsus mentions prolapsus, and recommends for it hip-baths of salt or astringent water, and local applications of a styptic nature after the womb has been replaced.

COMM. Aretæus, with his usual talent for description, draws a melancholy picture of a woman labouring under a complete procidentia uteri. He says it is occasioned by abortions, violent concussion, or severe labour; and explains very well how this happens from relaxation or rupture of the ligaments of the uterus.

Our author takes his account almost word for word from Aëtius, who acknowledges his obligations to Soranus.

Alsaharavius recommends nearly the same plan of treatment as Hippocrates; and directs us, when the attempts at reduction fail, to extirpate the womb by an operation. Avenzoar relates a case in which he saw the whole uterus projecting externally. He did not know the issue, only he was sure that the disease subsisted for a considerable time. He also relates another case upon the authority of a friend of undoubted veracity. Haly Abbas likewise mentions that the uterus sometimes protrudes fairly out, and enumerates the same causes of the complaint as our author. He relates that cases have occurred of the whole uterus having become putrid and been removed entire. Rhases, Avicenna, and Serapion, appear to have derived all their information from Aëtius and Paulus. Rhases directs us to bathe the parts with styptic decoctions, to put the woman into a bath medicated with roses, myrrh, &c., to reduce the womb, and retain it with compresses soaked in an astringent solution.

Eros recommends baths composed of the decoctions of acorns, pomegranate-rind, sumach, galls, &c.; also astringent fomentations, and a cooling diet.

The ancients appear not to have used pessaries made of solid materials, such as wood and metals.

SECT. LXXIII.—ON PHIMUS IN THE UTERUS.

Phimus takes place about the mouth of the womb, either in consequence of ulceration or of inflammation terminating in scirrhus. We must cure it by emollient hip-baths of oil and water, and of the decoction of fenugreek, applying cataplasms of a like kind, and introducing emollient pessaries. But if the complaint be protracted, we must have recourse to vapour-baths and fumigation with aromatics. The phimus may be dissolved

by a pessary of the sordes of unwashed wool, nitre, and turpentine-rosin, being simply an obstruction of the mouth of the womb. COMM.

COMMENTARY. Imperforate hymen and other obstructions of the vagina requiring a surgical operation will be treated of in the Sixth Book. The case here treated of is simply an obstruction of the os uteri by a callous substance. The emollient treatment by pessaries here recommended appears very proper. Aëtius makes mention of a more efficacious but dangerous application, namely, a piece of sponge spread with an ointment containing arsenic, alum, &c. Hippocrates had recommended an application containing verdegris. (De Steril. xii.)

Avicenna treats the complaint solely by a surgical operation. Alsaharavius approves of the emollient treatment, such as decoctions of mallows, fenugreek, linseed, &c.

SECT. LXXIV.—THE CURE OF STERILITY.

It is a common direction, applicable both to the man and the woman, to preserve the whole body in a proper temperament, by exercise, food, baths, and everything else in moderation. What is most especially to be attended to is, not to allow them to get into a fat habit of body; for fat persons are unfit for the propagation of children, owing to the want of agreement in their genital organs, and because they do not emit much semen. Nor are those who are much emaciated more so. All things which are heating and moderately flatulent assist, such as taking heating wine in moderation; and of potherbs, the rocket, clary (*horminum*), hedge-mustard, and the like; but they must, by all means, abstain from calamint and rue. When conception will not take place, owing to some cacochymy, we must purge it away, or dilute it by a proper diet. But women must attend particularly to the state of the uterus, and that the menstrual evacuation be not obstructed. When, therefore, the monthly purgation is near, the woman must attend particularly to take food and drink in moderation, and also some of those things which promote the discharge, such as the fragrant and acrid pot-herbs, as scandix, samphire, fennel, parsley, and alsander. And the intemperaments of the womb must be rectified. Wherefore the

cold intemperaments of the uterus are indicated by retention of the menses, a cold and incrassating diet, and some torpor about the pubes, loins, and legs; and these persons, if they become perfectly congealed in habit, have no venereal desires at all. Wherefore we must endeavour, in every other way, but particularly by all kinds of fomentations, and by fumigation with aromatics, to recall the natural heat. And it will not be at all improper to drink of castor and of some of the aromatic seeds, such as cumin, anise, the flowers of pennyroyal, and the fruit of junipers, mixing some pepper with each. Fumigations of the womb may be applied either by sitting on a proper chair, and receiving the vapours which arise, or by injections of hot water in which sage, mugwort, rue, cumin, pennyroyal, sweet flag, and the aromatic seeds have been boiled. A cataplasm of any of them may also be applied to the lower part of the belly. The epitheme of Polyarchus is also appropriate. Frictions of the lower part of the belly and nates are no less proper. The woman may also use pessaries of myrrh, rue, galbanum, and castor, having previously fomented with honied water or salt water. The pessary called Goné is also an excellent one. Warmer intemperaments of the uterus are indicated by the whole body being hotter than usual, by the menses being voided in small quantity and with pain, and by the privy parts of the woman being ulcerated. They are to be remedied by such things as are moderately moistening and cooling, such as the pot-herbs, lettuces, mallows, blite, gourd, cucumber, pompion, orach, and purslain, and by the other articles of food of a like nature; and we must apply to the bladder, abdomen and loins, all cooling things, such as cataplasms and liniments made of the juices of herbs. If the woman cannot conceive owing to humidity of the uterus, it is indicated by there being much moisture of the parts during the venereal act, and by the menses being thin and in great quantity. A desiccative diet, therefore, suits with these cases; also exercises and frictions of the upper parts; emetics and dry food in moderate quantities. It will likewise answer well to strengthen the uterus by austere medicines, such as the decoction of lentisk, of myrtles, of roses, and of sumach; or also by that of pomegranate flowers, of the tender shoots of bramble, and of galls. When the uterus is drier than common, it is to be cured by the opposite remedies, I mean by baths and unguents,

a moistening diet of pot-herbs, wine in moderation, and that not very old. But if conception be prevented by thick humours, and if they be of a pungent nature, the woman must be purged in a way suitable to each humour, and more particularly with the picra from aloes; then an injection with the whey of women's milk is to be administered, and a more suitable diet thought of. Pituitous humours are to be evacuated by exercise, sudorifics and emetics, or downwards by the bowels. The following medicine may be given: Of dodder of thyme, of euphorbium, of pepper, of carrot-seed, of the seed of Macedonian parsley, equal parts; triturate all together, and give to the amount of two drachms to drink. This purges well and heats the womb, so that it often makes the menses flow in cases where this discharge was stopped. As soon as this correction has become apparent, and the menses flow properly, then one must enjoy the woman as soon as the menstrual evacuation stops. When flatus in the womb prevents conception, the symptoms of which may be recognized from what we have said on inflation of the uterus, it is to be cured first by a spare diet, and administering cumin, dill, parsley-seed, and that of rue and anise; and by giving many of the aromatics, some to drink and others by pessaries. When the mouth of the uterus is shut up, it must be opened by injections of aromatics, and by using fomentations from mallows, linseed, fenugreek and oil, and sometimes of honey; or, by the stronger ones, composed of mugwort, fleabane, calamint, pennyroyal and chamomile. In addition to these we may use turpentine, nitre, wild cucumber, elaterium, cassia, and tar-water. When the mouth of the womb gapes, the diet, fomentations and medicines should be of a desiccant nature and astringent; and the flowers of pomegranates, lentisk, the roots of brambles, myrtle-berries, and those things applicable for a humid intemperament. Distortions of the uterus are to be rectified by fomentations and emollient pessaries. In such cases, coition *a posteriori* would seem to promote conception.

COMMENTARY. Hippocrates, in his ingenious work on Sterility, assigns the following causes for a woman's not conceiving: First, because the os uteri is turned obliquely from the passage to it. Second, because the inside of the uterus being too smooth, either naturally or in consequence of the cicatrices of ulcers, it COMM.

COMM. will not retain the semen. Third, when, owing to suppression of the menses, any obstruction takes place about the os uteri, it is apt to prevent impregnation. Fourth, when menstruation does not take place, the veins of the uterus become so gorged with blood that they do not retain the semen; or, on the contrary, the same effect may arise from profuse menstruation whereby the retentive faculty of the vessels is weakened; or a return of the menstrual fluid in too great quantity may wash away the semen. Fifth, prolapsus uteri, by rendering the mouth of the womb hard and callous, prevents impregnation. The treatment is delivered at so great length that we cannot venture even to give an abridgment of it.

Aëtius treats very fully of sterility, but his views are much the same as our author's. See also Oribasius (Synops. ix, 45.)

In cases of sterility, Octavius Horatianus directs us to ascertain whether the os uteri be turned aside or shut up. He delivers the treatment of these cases with singular minuteness. His principal remedies are pessaries, which of course are composed of various ingredients. We shall give the composition of one of the simplest of them in his own words: "Nullo etenim remedio meliore et magis innoxio, aut corrigi matrix poterit, aut purgari, quam usus nitri suppositione." That is to say, a suppository of soda is one of the safest and most effectual remedies.

Serapion, like Aëtius and Paulus, regulates his treatment entirely upon the principle of correcting the intemperaments, which he considers as the most common causes of sterility. A humid intemperament, he says, occasions sterility in the same manner that wet ground proves injurious to seed which is sown upon it; and a hot intemperament dries up the semen as the earth scorches the seed during the heat of the dog-days. Such being his ideas of the causes of sterility, one can readily comprehend his principles of treatment. Avicenna, Rhases, and Avenzoar likewise direct their attention to the correction of the intemperaments, but also recommend attention to any other local complaint about the genital organs. Haly Abbas, among other remedies, directs us to correct the state of the uterus by means of stimulant fumigations. One of his prescriptions contain arsenic. This would prove a potent but dangerous application. Alsaharavius expresses his distrust in the virtues of many specifics which had long retained celebrity for the cure

of sterility. Like the others, he directs us to find out the cause of it, and remove it if possible by suitable remedies. COMM.

Plutarch thus enumerates the causes which had been supposed to explain why a woman does not conceive after every act of coition. Diocles, the physician, maintained that it is either because no semen has been emitted, or less than necessary; or because it does not contain the prolific principle; or from a deficiency of heat, coldness, moisture, or dryness; or from relaxation of the uterus. The Stoics held that it is from the obliquity of the penis, so that it does not project the semen straight forward; or from the disproportion between the genital members. Erasistratus taught that it is occasioned by callosities and fleshy excrescences; or from the uterus being more spongy or smaller than natural. (De Placit. Philos. v, 9.) The causes of barrenness are fully and ingeniously treated of in the tenth book of Aristotle's 'History of Animals,' which, however, is of very doubtful authenticity.

SECT. LXXV.—ON FISSURES, CONDYLOMATA, AND HEMORRHOIDS OF THE UTERUS.

Fissures occur about the mouth of the uterus from difficult parturition, and at first they escape notice while the pains from the labour are recent; but afterwards they are slightly felt, either upon manual inspection or during coition, when they bleed, owing to the friction. They are also discovered when the vagina is distended, for ruptures in the circle of the mouth are perceived. In these cases all surgical aid, and medicines of an irritating nature, must be avoided, and recourse had to the simpler hip-baths and pessaries. The medicine called Tetrapharmacon diluted is befitting. But if it be callous, we must use that from paper, with rose-oil. If they cannot bear the strength of it, mix Illyrian iris with turpentine, and apply it. When the ulcers are cicatrized, it will be proper to use the medicine from cadmia, or some of the applications to the anus, such as that from litharge. It sometimes happens that these fissures, becoming chronic, are converted into condylomata, in which case the callus is to be removed by similar remedies, and the condylomata cicatrized. Hemorrhoids form about the mouth and neck of the uterus, which will be discovered by the speculum;

for eminences may be detected which, during the exacerbations, are painful, bloody, and red, but, during the remissions, are wrinkled, free from pain, somewhat livid, and emit a slight discharge. If possible, therefore, in these cases, one must seize upon them during the remissions with a forceps and cut them out; or if not, we may touch them with astringent medicines, sometimes applying dried pomegranate-rind with galls, or something such; and sometimes using those recommended for hemorrhages of the uterus, which will apply both for fluxes and hemorrhoids. These are recognized by the uterus discharging blood constantly, or if at intervals, not in the menstrual period.

COMM. COMMENTARY. This section is mostly compiled from Aëtius (xvi, 97, 107.) The astringent applications recommended by Aëtius contain alum, pomegranate-rind, ceruse, litharge, burnt lead, hypocistis, &c. For condylomata, the Pseudo-Dioscorides recommends an application containing arsenic. (Euporist. ii, 218.)

Avicenna and Rhases give a similar account of these complaints. They direct us to apply to hemorrhoids either such astringents as those directed above, or to remove them by a ligature. Haly forbids caustic medicines, as they may prove injurious to the uterus; and prefers extirpating them by a surgical operation. For fissures he directs us to use basilicon, with the fat of a duck or hen, and oil of violets, along with pitching and cataplasms. Alsaharavius directs us to extirpate hemorrhoids by an operation; and when the basilicon ointment does not succeed with the condylomata, to treat them similarly. As the ancients have not described polypus uteri by name, we are inclined to think that they must have comprehended it and all the other tumours about the uterus under the general appellation of hemorrhoids.

SECT. LXXVI.—ON DIFFICULT LABOUR.

Difficult labour arises either from the woman who bears the child, or from the child itself, or from the secundines, or from some external circumstances. From the woman in labour, either because she is gross and fat, or because her whole womb is small, or because she has no pains, or is affected with fear, or because the uterus or some other part is inflamed or otherwise diseased,

or because, from some natural weakness, she is unable to expel the fœtus, or because the labour is premature. From the child, either because it is too large; or small, and of little weight; or from its having a hydrocephalous head; or from being a monster, such as having two heads; or because it is dead; or, although alive, because it is weak and unable to advance outwards; or because there happens to be several children, as Herophilus relates a case of five; or because the position is preternatural. For the natural position of the child is, first, when its head presents with the hands bent upon the thighs, and having its head directly applied to the mouth of the womb; and next to that, when it descends by the feet, and there is no turning aside. All the other positions except these are preternatural. Or from the secundines, either because the membranes cannot be torn, owing to their thickness; or because they have been torn prematurely, owing to their thinness; for when the waters are evacuated unseasonably, the fœtus gets out with difficulty, from the dryness of the parts. From external circumstances, either from cold contracting or immoderate heat dissipating the powers, or from some accidental occurrence. Wherefore, if the difficulty of parturition arise from constriction, and, as it were, impaction of the fœtus, we must first endeavour to produce relaxation by injecting frequently hot sweet-oil with the decoction of fenugreek, of mallows, of linseed, or with eggs, as a paregoric. Then we must apply cataplasms to the pubes, abdomen, and loins, of linseed, or of honied water, or of oil and water; and use hip-baths of a similar nature. We must also avail ourselves of the relaxation produced by baths, if neither fever nor any other cause prohibit; and the woman is to be moved on a couch in a moderately warm air. Some have had recourse to powerful shaking, and have applied sternutatories. If the woman be in low spirits, she is to be encouraged; and if she is inexperienced in labour, she is to be directed to keep in her breath strongly, and to press down to the flanks. If she be in a swoon, she is to be resuscitated by such strong-smelling things as are not stimulant; and when moderately recovered, she is to be supported with a little food. A woman that is fat is to be placed in bed in a prone position, bending her knees upon her thighs, in order that the womb, being carried to the abdomen, may present with its mouth direct. By means of the fingers the mouth is to be

smeared with cerates or fatty substances, and gently dilated. And if there be any complaint in the parts, it must be previously attended to; and hardened fæces when retained must be expelled by an emollient clyster. The membranes may be divided either by the fingers, or by a scalpel concealed within them, the left hand directing it. And some of the fatty liquids may be thrown up into the uterus by a syringe. When the fœtus is in a preternatural position, we may restore the natural position, by sometimes pressing it back, sometimes drawing it down, sometimes pushing it aside, and sometimes rectifying the whole. If a hand or foot protrude, we must not seize upon the limb and drag it down, for thereby it will be the more wedged in, or may be dislocated, or fractured; but fixing the fingers about the shoulders or hip-joint of the fœtus, the part that had protruded is to be restored to its proper position. If there be a wrong position of the whole fœtus, attended with impaction, we must first push it upwards from the mouth of the womb, then lay hold of it, and direct it properly to the mouth of the uterus. If more than one child have descended, they are to be raised upwards again, and then brought downwards. Everything is to be done gently, and without pressure, the parts being smeared with oil. The time for placing the woman on the stool is when the mouth of the womb is open and meets the finger, and when rupture of the membranes is at hand. If, owing to the death of the child, or any other cause, it do not advance, we must proceed to embryotomy.

COMM. COMMENTARY. Hippocrates has treated fully of Difficult Parturition in the first book of his treatise 'de Morbis Mulierum,' from which we shall select a few remarks to give the reader some idea of his practice in these cases. When the child presents doubled at the mouth of the womb he directs us to push it upwards, and rectify the position so that the head may come down. When a hand or foot of a living child protrudes, it is to be pushed up in like manner, and the head made to present. When the leg or arm of a dead child protrudes, it is best, he says, to proceed in the same manner if possible; but otherwise they are to be amputated at a joint and the head opened. The process of opening the head is minutely described by him. He advises us likewise to open the chest when any difficulty of delivering

it is experienced. When in feet presentations the head is retained after the body is delivered, he advises us to introduce a hand between the os uteri and the head and deliver it. When the secundines are retained, he orders us to extract them slowly, and for this purpose directs that the woman being placed on a stool, the child not having been separated is to be allowed to hang down, so that by its weight it may produce separation; and, lest its weight should occasion too strong pulling, he advises it to be laid on wool, or bladders filled with water, which being perforated, the child shall sink down gradually and draw away the placenta. We shall have occasion to treat of this practice further in the Sixth Book. COMM.

Aristotle states that delivery takes place naturally by the head, but sometimes preternaturally by the feet. (H. A. vii, 7.)

Celsus directs us when the child is dead, to introduce the hand, finger by finger, into the womb, and examine the presentation, which will be the head, the feet, or the body laid transverse. He states that the object of the operator is to bring down the body either by the head or the feet. When the arm presents, he directs us to bring down the head, which is to be seized by means of a hook fixed in the eye, ear, mouth, or forehead, and cautiously pulled along; and in doing this he properly directs us to pull with one hand and keep the other fixed at the instrument. When the feet present, they are to be brought down and delivery accomplished in this way. When the child lies across, he recommends us, if the position cannot be got rectified, to fix the hook in one of the armpits and pull it down; but if other means fail, he directs us to divide the body at the neck and extract the parts separately. In extracting the secundines, he properly directs us to stretch the cord gently with the left hand, and introducing the right into the uterus, to separate the placenta from the womb and remove it along with the coagula of blood lying there.

The causes of difficult parturition, and the methods of remedying them, are more fully treated of by Aëtius than by any other ancient writer; but, as Paulus evidently copies from him, we shall merely supply a few things which our author has omitted. Among the causes of difficult labour, he mentions too compact a union of the ossa pubis. When the woman is too young or too old, he justly remarks that she wants strength to

COMM. accomplish delivery readily. He mentions that in the delivery of twins, the two children may get entangled. He means, probably, that the head of the one may follow the delivery of the breach of the other. Of this singular complication, a fatal case was published in the 'Edinburgh Medical and Surgical Journal' some years ago. He expresses himself favorably with respect to feet presentations. All cross presentations are said to be difficult to rectify, but the child is to be brought by the head or the feet according to circumstances. When delivery is retarded by rigidity of the parts, he strongly recommends the warm bath. When fulness of the bladder occasions obstruction, he properly directs the urine to be drawn off by a catheter. When a foot or hand presents, he directs us not to pull down the part, lest it become more firmly impacted, or lest it should be fractured or dislocated; but the projecting part is to be pushed up and the position restored.

According to Eros, one of the most common causes of difficult parturition is heat and tumefaction of the external parts. In this and in other cases, he directs the patient to sit in a bath prepared with emollient herbs, and to get the parts about the belly rubbed with oil of violets or of roses.

Serapion treats this subject in nearly the same terms as our author. Like the Greeks, he approves of emollient oils and baths to produce relaxation. The same practice is recommended likewise by Rhases. When the membranes are tough, he advises us to tear them with the fingers, or to open them with a knife.

Avicenna has treated of difficult parturition with his usual accuracy, which exhausts every subject he handles. He states that the expulsion of the child is performed by the abdominal muscles. This was the opinion of Galen; and we are inclined, upon the whole, to think it pretty correct. He approves greatly of the bath, both before labour has come on and during the time of it. When delivery is difficult, owing to the size of the child, he directs us to apply a fillet round the child's head, and endeavour to extract it. When this does not succeed, the *forceps* are to be applied, and the child extracted by them. If this cannot be accomplished, the child is to be extracted by incision, as in the case of a dead fœtus. This passage puts it beyond a doubt that the Arabians were acquainted with the method of extracting the child alive by the *forceps*.

Albucasis recommends us, when the membranes are tough, to perforate them by the finger or a *spatumile*. When the waters are discharged, he directs us to press down the woman's belly so as to make the head descend. If it does not come down readily, he advises us to give a clyster, and afterwards to apply compression to the belly. Albucasis also approves of the tepid bath. To promote the delivery of the secundines, he recommends us to make the woman sneeze and retain her breath. COMM.

Alsaharavius (probably the same as Albucasis) treats fully of the causes of difficult labours. When occasioned by dryness and constriction of the vagina, he recommends baths, fomentations, and clysters, containing the decoctions of mallows, fenugreek, and linseed; and also directs the parts to be rubbed with warm oil. When obstruction of the rectum by fæces prevents delivery, he advises us to administer a clyster. When intense cold is the cause of the difficulty, he recommends clysters of hot oil, and the warm bath. When the membranes are tough and retard delivery, he directs the midwife to break them with a sort of reed or needle.

Haly Abbas mentions imperforate hymen among the causes of difficult labour. Such cases have been reported by modern writers on midwifery. See Baudelocque (§ 341), and Burns (Midwifery, x.) Fabricius ab Aquapendente relates a very curious case in which conception had taken place without rupture of the hymen. (Œuvres Chirurg. ii, 81.) When the difficulty arises from fatness and debility of the expulsive powers, Haly directs us to rub the parts with warm olive-oil, or other such emollients, and to make the woman sit in a bath prepared with chamomile, melilot, &c. He mentions, as an internal remedy, the infusion of a swallow's nest (alcyonium?) When the difficulty proceeds from cold, he recommends the use of the tepid bath; and when from the contrary cause, he advises cooling things to be applied. According to Rhases, difficult parturition may arise from the mother, the fœtus, or the secundines. He appears to have considered all presentations unnatural except the head. In the other cases, he says, the life of the mother or child is endangered, although, he adds, many living children are born by the feet. When delivery of the head is found difficult, he recommends ligatures or fillets. When the feet or hands present, he directs us to restore the position, or if that is impossible, to bring down the

COMM. feet. Many of his authorities mention the warm bath and lubricants.

From the sketch which we have given above, it will be seen that the Arabians have made mention of the forceps; but that most probably the Greeks and Romans were unacquainted with this instrument, as far, at least, as appears from their works on medicine which have come down to us. It is deserving of remark, however, that in the house of an *obstetrix* which has been excavated in Pompeii, there was found an instrument of art bearing a very considerable resemblance to the modern forceps. It is a well-known fact in the history of inventions that many useful discoveries have long been kept as family secrets. This was the case even of a late date with the Chamberlains, who were the first in modern times to use the forceps.

SECT. LXXVII.—ON ISCHIATIC DISEASE.

Ischiatic disease, being of the class of arthritic complaints, is distinguished solely by the cause of it being seated in the hip-joint. The cause of it then is a thick and pituitous humour fixed in the articulation of the hip-joint. The pain in these cases extends from the parts about the buttocks and groins to the knee, and often as far as the extremity of the foot. When we see such a patient, in the beginning of the complaint, after the evacuation of the hardened fæces by a clyster, we must abstract blood from the arm at intervals; but if the disease be of some standing, we must abstract the blood from the ankle of the affected leg. During the exacerbations we must use this embrocation: Of the oil of privet, viij cyathi; of vinegar, iv cyathi; of nitre, ij cyathi; of rosemary-seeds, j cyathus; to be rubbed in hot with unwashed wool. After which a cataplasm is to be applied of the flour of bitter lupines with oxymel; or of the flour of darnel with rosin, the root of the wild cucumber, nitre, calamint, rosemary-seeds, and bay-berries. Calamint alone with oxymel, or honied water, will form a proper cataplasm. And we may rub the parts with this paregoric-plaster: Of wax, dr. x; of turpentine, dr. xxv; of verdigris, dr. vj; of myrrh, of galbanum, of iris, of each, dr. vj; of gum vernix, dr. v. But they must take the propoma containing Cyrenaic juice to the size of a bitter vetch, or a drachm of castor with three oboli of opopanax. And

the rind of the root of capers in a draught, or added to the cataplasms, is of use. When the pain is great, anodynes may have place, such as the antidote of Philo and that from two peppers. This injection is to be used: Of honey, iss cyathus; of oil, iss cyathus; of water, ij cyathi; of nitre, dr. viij; of turpentine, dr. iv. These are to be injected warm, and the anus fomented, that they may be the longer retained. It evacuates mucous matters, and sometimes blood when it affords more relief. But if the complaint be prolonged, which is rare, we must repeat it frequently, instead of the water substituting the decoction of centaury. Blood is also evacuated by injecting the seed of treacle-mustard, and the juice of elaterium, and the Sicyonian oil prepared from it, or from the roots of the plant. The brine also of pickled fish, or of pickled olives, may be properly injected. Cupping-instruments may be applied to the hip with much heat and with scarifications, or sometimes leeches may be used. When the affection is protracted, we must proceed to purging either with the hiera, or giving of the medullary part of colocynth properly triturated to the amount of a drachm in two cyathi of honied water, more or less, according to the strength of the patient and the good state of his bowels. And let rue be boiled in the honied water. The pottage made with colocynth purges excellently. In some cases emetics from radishes have proved beneficial at the commencement. During the remissions we may apply dropaces to them, and use the restorative unguents (*acopa*) from euphorbium, and particularly the one called the complex. The natural baths also are proper; or if these be not at hand, they may bathe in the others; using the restorative ointments formerly mentioned, and the compound ones,—the Æsculapian, and that composed of equal portions of euphorbium, adarce, black hellebore, castor, pellitory, pepper, and wild grape dried. After the bath, we must sprinkle upon the skin while still warm, of dried pitch, oz. iij; and of native sulphur, oz. ij; and let the part be covered with paper. If even these things do not succeed, a remnant of the disease remaining, it will be proper to apply a cataplasm of mustard along with dried figs, or by itself. These complaints are completely removed by the Iberian herb, which some call lepidium, and some the wild cardamus (*cress*). And the shrub which grows among us, having leaves resembling those of the bay, but much larger, is of ap-

proved efficacy, not only in ischiatic, but in other chronic complaints; but it is by far most efficacious in summer. Or if it should not have shooted out its leaves, we must bruise the rind of the root with axunge, so as to form a plaster; and then, spreading it on a thick rag, apply to the parts affected with the pain, namely, to the whole buttocks and thighs; and allow it to remain until the part become black, or, at all events, until the cuticle become livid; then take it away, and, having washed, apply this cerate: Of opopanax, oz. iv; dissolve in ij cyathi of vinegar; and add to the cerate of privet. If they do not admit the use of such caustics, we must use the plasters called extirpative, among which is the following: Of wax, of pine-rosin, of each, dr. xij; of wild pigeon's dung, of recent lees of burnt wine, of each, dr. vj; of galbanum, dr. iss. And the plaster called the Lioness is of the extirpative kind. Those composed from strained lye and nitre are also proper. And some have continued to drink certain potions for a whole year, among which is the one composed of four ingredients: Of wall-germander, lb. j; of gentian, oz. ix; of round birthwort, oz. ix; of the dried seed of rue, j sextarius: pound these things together, sift, and give every day a spoonful to the patient when he has an empty stomach and his digestion is good, with two cyathi of cold water; and continue this for a year, until the complaint cease. And the medicine composed of seven ingredients, and that which takes its name from Proclus, are of the same reputation. Exercise may be taken by walking, frequent bending of the body, leaping, and running. The food should be moderately attenuant and digestible. If ischiatic disease do not yield to any of the remedies now mentioned, it sometimes terminates in suppuration; and sometimes, from a relaxation of the ligaments, the thigh is dislocated at the joint. Wherefore, when the affection is protracted, we must burn the joint in three or four places (as will be described in the Surgical part of the Work), and the ulcers are to be kept open for many days.

COMM. COMMENTARY. Consult most of the authors referred to in the next Section.

Hippocrates gives a pretty correct account of the symptoms which attend an attack of morbus coxarius, or ischiatic disease. He says it most commonly arises owing to the fluids of the

joint being dried up by exposure to the sun. It is accompanied, he justly remarks, with pain of the loins and vertebræ of the back, shooting down even to the knees. A sharp hot pain, he adds, is frequently seated in the groins. Upon any motion the most piercing cries are extorted. (De Dieb. Judic. 6.) COMM.

In ischiatic disease Galen recommends general bleeding, and most especially, emetics, which, he says, by occasioning a determination upwards, operate more beneficially than purgatives in this complaint. He disapproves of acrid embrocations, but approves of cupping. He also allows stimulant clysters of colocynth. He gives a long list of local applications from Andromachus, Asclepiades, and Democritus. He makes mention of the Iberian herb; for further information respecting which we refer the reader to Matthiolus (ad Dioscorid. i, 147), and Bernard (ad Nonni Epit. 215.) It was the *Lepidium Iberis*. He recommends, in certain cases, the part to be beaten with rods. (Meth. Med. xiv, 16.) See also Pseudo-Dioscorides. (Euporist. i, 240.)

Celsus says that morbus coxarius is a painful complaint and difficult to cure. He recommends warm cataplasms and fomentations, with various applications of an emollient or stimulant nature. If inflammation come on, cupping-instruments with scarifications are to be applied; diuretics are to be given; and the belly is to be opened if constipated. He also approves of friction, and even of forming issues by burning with a red-hot iron.

Various methods of performing the operation of burning are detailed by Aëtius, as will be explained in the Surgical part of this Work.

Cælius Aurelianus gives a long and interesting account of this complaint. Among the symptoms he mentions the lengthening and shortening of the limb, the wasting and paralysis of it. The periosteum, he says, is principally affected, but likewise the heads of the muscles. He correctly states that, when the complaint is protracted, collections are apt to form in the joint. He approves of the emollient treatment, the application of wool dipped in sweet oil, fomentations, and bleeding from the arm. He recommends gentle purgatives and clysters, but condemns the use of drastic cathartics, such as scammony, hellebore, and the like; because, he says, they occasion irritation. When the pains are protracted he approves of scarifications and leeching, after which the vapour of sponges squeezed out of hot water

COMM. will be of service. He also makes mention of the bath of oil and various emollient ointments. He describes several methods of applying heat to the part, but condemns them in general, upon the principle that they increase the local irritation. He disapproves of diuretics as recommended by Diocles, and otherwise animadverts freely upon the practice of the other sects.

The Arabians adopt the views of Galen and his followers with little addition or alteration. Thus Serapion recommends bleeding from the arm and ankle; clysters of drastic medicines, such as colocynth, centaury, hermodactylus, &c.; soothing applications externally; quieting medicines internally; emetics consisting of radishes, vinegar of squills, or even of white hellebore. When these do not succeed, he recommends us to form an issue by burning the part with a red-hot iron. Avicenna agrees with Galen in condemning discutients and recommending emollients at the commencement, and in preferring emetics to cathartics. For this purpose he particularly mentions a solution of nitre and vinegar. When the disease is combined with inflammation, Haly Abbas directs us to begin with venesection if not otherwise contraindicated. He enjoins the necessity of abstaining from taking much food and things of difficult digestion. He directs us to pour water of a moderate temperature over the part, and to rub it with an emollient oil; but he forbids refrigerant and astringent things, as they are apt to drive the humour inwards. He joins the others in recommending particularly the hermodactylus (*soureniaron*), both by the mouth and in clysters. When other means fail to remove the pain, he directs us to apply a cupping-instrument with strong heat over the joint, or even to use the actual cautery. Alsaharavius recommends the same general plan of treatment. He directs the patient to abstain from the use of wine, or if he cannot observe this regimen, he recommends him to use the bath and friction with glass (pounded he probably means). He gives very excellent admonitions to guard against indigestion, and to avoid all things of a cold nature.

On the ancient cauteries for disease of the hip-joint, see Book Sixth, Sect. LXXII.

Most of the earlier modern writers approve of the application of the actual cautery for the cure of sciatica. See Rogerius (i, 74.)

SECT. LXXVIII.—ON GOUT AND ARTHRITIS.

It is not weakness of the parts alone that occasions gouty and arthritic complaints; for then the paroxysms would be without ceasing, inasmuch as the debility is always present in the weak parts. Neither is a humour the sole cause, for then the complaint had not attacked the joints only. But the disease is occasioned by a preternatural humour and a weakness of the parts meeting together. For when the nutritive power of the parts becomes debilitated from repletion with food inducing dyspepsia, the prevailing humour, fixing in some of the joints which are already in a weak state, and stretching the nervous ligaments, produces pain. For the inflammation is not an original affection of the nerves of volition; as then it would have affected also the parts between the joints, such as the middle of the legs, thighs, arms, and forearms; but those of volition are affected sympathetically. When, therefore, the humour is seated in the joints of the feet only, the complaint is called podagra; but when the cause is diffused over all the joints of the body, we commonly call it arthritis, in which the vertebræ, scapulæ, jaws, and every other joint are attacked with the disease. In certain cases the ears, teeth, and pharynx, and sometimes even the liver and spleen participate in the arthritic pains, when, if there is not a speedy translation of the disease to the joints, the patients will be in urgent danger. The prevailing humour is sometimes bilious, sometimes sanguineous, sometimes melancholic, but for the most part it is pituitous and crude, being engendered by excess of food, indigestion, and want of exercise. When the disease is protracted in the joints, the humours become thick and viscid, so as to form what are called tophi or chalk-stones. Sometimes the humour is of a compound nature, so that the disease is difficult to distinguish, and difficult to cure, or nearly incurable. The precursory causes of this affection for the most part are immoderate labour, violent walking, frequent exercise on horseback, the unseasonable use of venery, cold drink taken unseasonably, eating of much cold or unwholesome food, and drinking much wine. And some from accidents, as a blow, a sprain, or the like, have experienced the first attack of this complaint, the materials of the disease having previously remained quiet in the system

until roused by the proximate cause. Sorrow, care, watchfulness, and the other passions of the mind, not only excite an attack of the disorder, but also generate a cacochymy either primarily or incidentally. Wherefore the causes of the complaint, as I have said, are various; but the differences of the noxious humours are in so far easily detected, being discovered by their colour and other symptoms. A bilious rheum, in addition to paleness and redness of colour, occasions a sensation of heat and acute pain, and is speedily determined to the skin, nor is it attended with much swelling. It is exacerbated by heating applications, and relieved again by cooling, which, for the most part, is the case with all the others, but more particularly when the exciting cause is bilious. Fever also frequently comes on at the height of the paroxysms, and then they are thirsty. Thus also you will find the skin darker when from a melancholic humour; white and watery when from a pituitous, in which case the pain is more latent and more slowly occasions swelling; and the colour is sanguineous when a bloody humour prevails. In order to form a more decided diagnosis, you will be assisted by taking into account the previous mode of life, and so forth.

The cure of rheums from a bilious humour. The commencement of the cure, when from yellow bile, more especially if the quality of it occasion the disorder, should be the evacuation of the offending humour by purgative medicines, such as that from rhodomel, that from quinces, the antidote called picra, and aloetic pills. During the paroxysms, we may apply externally rose-oil with the yelk of an egg, and some wine, rubbing the part gently with it; and apply the herbs of a cold nature, such as nightshade, purslain, henbane, houseleek, marsh-lentil, endive, poppy, knotgrass, rose-leaves, and the like. These things may be sometimes rubbed in, and sometimes applied in the form of a cataplasm, with crumbs of bread soaked in oxycrate, or from barley-meal with rose-oil. When the inflammation of the joints is of an erysipelatous nature, a decidedly paregoric application is the peel of a fresh gourd laid on the part, or the fleshy part of a pompion or cucumber, both alone and with bread; or the leaves of perdicium (*pellitory of the wall?*), and ivy with bread and fine polenta. And fleawort boiled in barley-flour mitigates the inflammatory heat in a wonderful manner; and so also the

rose-cerate cooled with some of the frigorific juices, and that prepared from the flour of beans. It is prepared thus: Of wax, oz. v; of chamomile-oil, oz. iiss; of rose-oil, oz. iiss; of the flour of beans, oz. ss; the yelks of five eggs.—*Another*, a cataplasm: Pound green mallows boiled; and having made fleawort to the consistence of birdlime separately, mix together; then add the red part of eggs and chamomile-oil, and apply as a cataplasm. When the pain is great and difficult to endure, we must have recourse to preparations of saffron, of horned poppy, and of opium, triturating them with oxycrate, and then using them in the form of liniments, or of cataplasms with crumbs of bread. Galen makes mention of this one: Of poppy-juice (*opium*), dr. iv; of saffron, dr. j; triturate with milk of a cow or of a goat; or add the inner part of bread, and having softened it by touching it with a little rose-oil, use for a cataplasm. Or triturate the opium and saffron with the milk, and add to the rose-cerate. And the cerate made from the torpedo and the oil of the same are possessed of similar properties.—And this one in like manner: Of crumbs of bread soaked in water or in oxycrate, and of houseleek, or of nightshade, or of purslain, and of the fleshy parts of dates, and of poppy-seeds, equal parts; of roasted yelks of eggs and rose-oil, q. s.; form a cataplasm. The use of narcotics must not be continued, but until the violence of the pain be abated; for the frequent use of them occasions impaction and tophi, and makes the difficulty of motion to be protracted. After the use of anodynes, then, we must have recourse either to diachylon dissolved in oil of chamomile, or the composition from marshmallows, or some such application. After we have warmed the congealed parts, we must strengthen them by a plaster of dates dissolved in vinegar and rose-oil or wine and rose-oil. Or, if the weight of the plasters prove troublesome, we may rub in the juice of acacia with oxycrate, or lycium along with saffron, horned poppy, and the juice of perdicias in oxycrate. The diet should be cooling and moistening, such as ptisans, and spoon-meats from chondrus, and of pot-herbs, the mallows, the lettuce, and the endive; and of birds, more especially the young of domestic fowls; and of fishes, those caught in rocky places, and the sea-urchin, shell-fish, and the like. Let them avoid all things that are heating and form pale and yellow bile, old wines both the yellow and dark, and repletion.

Let them use baths of sweet water, even at the time of the defluxions, as far as regards the cause of them, unless something else prohibit. Let them avoid violent passion, abstinence, acrid food, drinking of wine, immoderate labour, and venery.

The cure of rheums from a sanguineous humour. In those cases in which the prevailing humour is sanguineous, we must have recourse to venesection without delay, and also in cases where the prevailing humour is phlegm or black bile; since in them the humour is for the most part contained in the veins, proving injurious by its quantity rather than its quality. We must have recourse then to venesection only at the first attack of the disease; since those who have had already frequent attacks of rheumatism are injured rather than benefited by the loss of blood, more especially when the body is naturally cold or weak. After the evacuation of the blood, if there was more than a plethora of blood, we must have recourse to purging with hiera after a short interval. And the Julian oxymel is a purgative suitable to these cases. Those who reject such purgative medicines may use these pills: Of aloes, of colocynth, of black hellebore, of scammony, of each, oz. j; of euphorbium, oz. ss; of nitre, oz. ss; mix with the juice of cabbage, and give according to the patient's strength. It will be better, however, if prepared with the juice of quinces.—Another pill given to gouty persons in the paroxysms, during the remission, and from whatever humour: Of aloes, oz. vj; of agaric, oz. ss; of saffron, oz. ss; of costus, oz. j; of spikenard, oz. j; of schenanth, oz. j; of balsam fruit, oz. j; of cassia, oz. ij; of scammony, oz. ij; of dodder of thyme, oz. iiiss. A moderate dose is scr. ij; and a full one, scr. iv. Pills of Armenian stone also purge in a wonderful manner, being particularly applicable in arthritic cases, whether given at the commencement, in the decline, or during the remissions of defluxion. And since some avoid scammony because it is bad for the stomach, we may give them these things when a pituitous matter prevails: Of the medullary part of colocynth, of black hellebore, of bdellium, of gum, of aloes, of each, oz. j; of Alexandrian nitre, of euphorbium, of each, oz. ss. The dose is scr. iv. Instead of the gum I have substituted dodder of thyme. Some, in the paroxysms of all arthritic diseases, have recourse to purging with hermodactylus; but it is to be remarked that the hermodactylus is bad for the sto-

mach, producing nausea and anorexia, and ought, therefore, to be used only in the case of those who are pressed by urgent business; for it removes rheumatism speedily, and after two days at most, so that they are enabled to resume their accustomed employment. I knew a person who did not give the substance of hermodactylus, nor any of the compound medicines containing it; but boiling the plant itself with some of the common remedies, such as anise or parsley, he gave the decoction to drink; and it was wonderful how those who got it, after having evacuations of the bowels, were freed from the rheumatism. It is necessary, however, as I said, because the medicine is bad for the stomach, to correct the mouth of the stomach afterwards by stomachics and tonics, along with things that are moderately heating. Alexander says that purging by coronopodium is preferable to that by hermodactylus, as it procures evacuation and relief from pain, and at the same time is not bad for the stomach. But topical applications are to be had recourse to in cases of pituitous rheumatism. When the pain is moderate, a green cabbage-leaf may be applied, and also parsley, fleabane, and the straight vervain; but when the pain is violent, take of the flour of fenugreek, p. iij; of the flour of darnel, p. j; of the flour of chick-peas, p. j; make a cataplasm with honied water, or thin wine, with a little oil of privet, or of nard, more especially if in winter. And the ashes of burnt cabbage-roots, or of their stalks, when formed into a cataplasm with axunge, have proved beneficial to many; but, in order that it may prove soothing, the axunge must be fresh, whereas, if we wish it to be discutient, it must be old and salted. And in like manner the dung of oxen, when boiled in honied water with barley-meal, or fresh moist dung applied with the leaves of cabbage; and so also goats' dung by themselves, or boiled with barley-flour in oxycrate. And since some have derived relief from seemingly opposite remedies (for a mixture of various humours confounds the diagnosis), we must state the materials thereof promiscuously. Wherefore the wild and garden orach in a cataplasm with bread are beneficial, or the leaves of petty mullein, triturated with bulbi and bread, or with polenta, or the cataplasm of raw barley-meal. Upon the whole, when the cause of the complaint is obscure, we must change sometimes to medicines of the same class, and sometimes to the opposite,

not continuing long with the same application when it does not afford relief. These things we see every day occur in professional matters. And often a certain remedy proves beneficial to one joint, while another joint of the same patient similarly inflamed is not only not benefited at the same time, but occasionally is even injured by it. And this is a wonderful circumstance, that one and the same joint, when treated with the same remedy, is sometimes benefited, and soon afterwards exasperated. When a viscid and thick matter prevails, it is not perhaps relieved by calefacients, but the acrid and hot quality of the humour prevailing is to be soothed by frigorific remedies; nor is it at all wonderful that a matter naturally cold, in the time of the inflammation, should become heated and glowing, to say nothing of the admixture perhaps of bile. The flour of lupines with oxymel or oxycrate, or the root of laserwort, or of bryony, with bread, prevent the formation of tophi. And the following composition is safely soothing and moderately discutient: Of lycium, oz. j; of ammoniac perfume, oz. j; having triturated with very old wine and oil of unripe olives, boil, and add of the flour of beans, q. s.; and having boiled moderately, apply as a cataplasm. After the acme of the complaint, if a swelling be left, apply a cataplasm with the bulbi by themselves, or with fine polenta, until it produce excoriation; for in this manner they act. When not relieved by the cataplasms, we may have recourse to embrocations and affusions on the parts (more particularly if the extremities be affected), with chamomile, melilot, or centaury in decoctions. The preparation of capers has entirely relieved some. The following is the most active of all the applications: Having boiled thyme, marjoram, savory, and calamint in the most acrid vinegar, bathe the parts affected with the vinegar, not only once, but often in a day, with confidence. This has relieved many when suffering not only from phlegm but also from bile.

Some observe this practice also: The acorns of the ilex being powdered, are pounded and much boiled, and the joints of the extremities at the commencement of the rheumatism are fomented for a considerable time with the decoction, but it is poured from a sponge upon the inner parts; whereby the violence of the offending matter is repelled. It also is applicable to bilious cases; and, in like manner, immersion in hot water

without any decoction. For pains occasioned by intense cold, or infarction of the joints, this is a powerful remedy: Of old oil, lb. iss; of Alexandrian nitre, lb. j; of turpentine, lb. j; of euphorbium, oz. j; of iris, oz. ij; of the flour of fenugreek, a sextarius and a half. In these cases the remedies recommended for ischiatics are excellently applicable. Many, in the case of those who are thus affected from a cold cause, apply, after the acme, mustard with dried figs and the other rubefacients, but some the preparation from cantharides. But these things prove injurious afterwards, unless one use the emollient applications, such as that from fuller's herb, the one called Pyxis, that of Basilius, that from the fir-tree, that from the poplar, those called Promium and Lysiponium, and the stronger of the Acopa: in which cases sympathetic affections of the nerves and impaction of the humours particularly take place. And the application from the urine of a mule, more particularly if applied at the acme, is beneficial in the cold rheums: and, in like manner, the trochisk from the two hellebores is applicable for the œdematous and spongy swellings; also fomentation with the toasted salts; or otherwise affusion or embrocation with hot sea water; and the plasters prepared from salts, those from strained lye and nitre, and the cataplasms of a like nature after the acme. Food of a drier nature, and not excrementitious, suits well with these; also abstinence from food, or a spare diet, and refraining from frequent baths. Having bathed, they should be rubbed with nitre and the other unguents used for friction. In the decline, they should have recourse in particular to gymnastic exercises and friction of the joints, and the natural baths, or the sand baths, and emetics from radishes and food from grain. Those properly prepared for it may be vomited or purged with the white hellebore.

On rheums from a mixture of humours. Those labouring under a mixture of humours, after the evacuation of the blood at the commencement of the disease, should use the topical remedies already mentioned. When the sanguineous plethora is of a more bilious and acrid nature, recourse may be had to those things recommended for bile; when it is of a colder and more pituitous or melancholic nature, those afterwards mentioned, with the exception of such as are very acrid; and if protracted, these also may be used. And this cataplasm is applicable at the commencement: Pomegranate rind, sumach, and polenta triturated with

wine, are applied in the form of a poultice.—*Another:* Having boiled the leaves of cabbage, and triturated carefully, add the lees of vinegar, two yelks of raw eggs and a little rose-oil, and having triturated, apply, changing it frequently. Let them take food that is attenuant and of little nourishment. Let them, therefore, abstain altogether from flesh and pulse, from much wine of a dark colour; and, if possible, let them abstain from drinking wine altogether. For I have known many persons who have abstained altogether from this article alone, and all of them derived benefit. Those who did so in the commencement of the complaint were entirely freed from it; and those who were later in doing so experienced afterwards fewer paroxysms, and these not of great severity. If, therefore, no inconvenience occur, or be dreaded from it, they should abstain from wine all their life. Those who from weakness or coldness of constitution appear to sink under this regimen, after abstaining from wine for two years, may gradually accustom themselves to take a small quantity of diluted wine. Those who refrain from wine should take instead of it a decoction of anise, or of some such seeds, avoiding altogether the use of the autumnal fruits, and other things of a cold nature, and also venery. Of those who attempt to get rid of the complaint by continuing under a course of medicines for a complete year, many who suffer from pituitous and redundant humours have been benefited thereby, whereas such as are of a hot and dry intemperament have brought on sudden death, the offending matter being translated to the intestines, kidneys, side, lungs, or some vital part. It is better, therefore, for those who are bilious and sanguineous, to abstain from wine; as from this course there is no risk of falling into the dangers just mentioned. Those who are affected with cold and redundant humours should take the theriac of vipers more frequently if they have good digestion in winter, but more rarely in summer; for it either removes the complaint altogether or renders it more moderate, and proves injurious to none of the afore-mentioned parts. And since some persons compel us to administer the medicines called Antidotes, you should be aware that the following are all of the same kind, namely, that from water plantain, that of Agapetus, those called Atacton and Octaidon, that of Proclus, that from water germander, that from coral, and many others. The safest of them all, and yet of approved efficacy, is the one

from coral, which dissolves tophi that are formed in the joints. The properties of all these things, the manner of using them, and the precautions to be observed with regard to them, you will find described in the Pharmaceutical part of this Work; and also the composition of depilatories for arthritic complaints, and the mode of applying them to these habits, I mean the pituitous. Some, for the entire removal of the complaint, boil whole wolves in oil, wherewith they cure arthritic cases; some throwing them in alive, and others dead, into a large caldron. And in like manner they boil hyænas, making a discutient oil from them; and then filling the cistern of the bath with it, and putting the arthritic patients into it, they direct them to remain in it for a considerable time. By these means it happens that not only the swellings about the joints, but the whole body, is evacuated.

On tophi, or chalk-stones. Since tophi are often formed in the joints, sometimes owing to a thick and terrene humour seating in the parts, and sometimes owing to the use of applications which are immoderately discutient and desiccant without being emollient, it is proper to know that the most suitable remedies are such as are at the same time emollient and discutient. Wherefore, old suet, marrow, ammoniac, bdellium, very old oil, and storax, are emollient; and nitre, salts, strained lye, adarce, euphorbium, and the like, are discutient and desiccative. This is an excellent application for tophi in the joints: Very old and acrid cheese pounded and applied with a decoction of fat swines' flesh, it also being old. For the chalk-stone breaking spontaneously, a discharge of it takes place every day. The composition from ham (which is prepared in two ways) is also an approved remedy, and those described from strained lixivial ashes (potash?). And this one is particularly excellent: Of aphronitrum, of turpentine, of protostacton, of virgin wax (i.e. *bee-glue*), of each, oz. iv; of wax, oz. ix; of colophonian rosin, lb. j; of oil, oz. xvj; mix together, and use for chalk-stones and apostemes. The composition from dragon's blood is of wonderful efficacy for chalk-stones and many other complaints, but is difficult to procure. But that from walnuts is not only efficacious but at the same time easily procured; and is applicable not only to those who are strong, but also to those who are sensitive, if mixed with honey or the composition from anemone, in the proportion of two parts to one of

the composition. When these things are not at hand, an equal proportion of ceruse may often be mixed with it.—*Another for tophi:* Having triturated red arsenic, mix with misletoe of the oak, and use.—*Another, which is applicable also for fistula and ægilops:* Of oil, one sextarius; of litharge, oz. viiiss; of arsenic, oz. j; boil the litharge and the oil until they do not stain, then sprinkle the arsenic well levigated, and before it catch fire, take off and use. The compositions from the flower of Assian stone, when used during the intervals, are applicable to all the collections which form in the joints; and some of the ancients attest that they remove the complaint entirely. The composition from the flower of salt, when applied in like manner during the remissions, is believed to dissipate whatever swellings remain.

On the prophylaxis of gout. Gout and rheumatism, when formed, are among the most difficult of diseases to cure, except by the methods we have described; but, before being fixed, it is easy to prevent their occurrence by restricting the diet, giving only such food as is of easy distribution and not excrementitious, with a moderate allowance of wine, and increasing the exercise as far as proper. As a remedy, salts triturated with oil and rubbed into the joints, are of great use to all who are anxious to avoid falling into a gouty affection, unless they be of a dry intemperament. They ought to use it morning and evening through life, and the same thing is to be used after the decline of the inflammation.

COMM. COMMENTARY. Consult Hippocrates (Aphor. vi; Prognost. 15); Galen (Comment. in Aphor. Hippoc., de Med. sec. loc. ix); Celsus (iv, 24); Serenus Samonicus; Arctæus (Morb. Chron. ii, 12); Scribonius Largus (41); Cælius Aurelianus (Tard. Pass. v, 2); Alexander (xi); Aëtius (xii); Oribasius (Synops. ix, 58); Actuarius (Meth. Med. i, 21); Nonnus (216); Marcellus (de Med. 35); Octavius Horatianus (ii, 21); Demetrius Pepagomenos (de Podagra); Psellus (Opus Medicum); Macrobius (Saturnal. vii, 4); Lucianus (Tragodopodagra); Serapion (iv, 25); Avenzoar (ii, 3, 28, ii, 7, 31); Avicenna (iii, 22, 2); Haly Abbas (Theor. ix, 41; Pract. viii, 32); Alsaharavius (Pract. 38); Rhases (Divis. 102, ad Mansor. ix, 90, Libellus de Morb. Junct., and Contin. xxvi.)

The Prognostics of Hippocrates will be admitted at the pre-

sent day to be correct. Those who are old, or who have chalk- COMM.
stones formed in their joints, or lead a laborious course of life, or have dried bellies, cannot be cured by any human means. Young persons not having *tophi* formed in their joints, and who live guardedly, and whose bowels will bear the proper treatment, may be cured. These complaints are best removed by dysenteries or other evacuations downwards. His principal remedies are purgatives administered by the mouth or by injection, and local applications of a cooling nature, and even pouring cold water on the foot. When the pain of the gout becomes fixed in a joint, he directs us to burn it with crude flax.

Seneca mentions it as a monstrous example of the depravity of his age, that the women, by their luxurious habits, had become subject to gout. (Epist. 95.)

According to Galen, gout and arthritic complaints are occasioned by a collection of some humour in the affected part. This humour may be blood, phlegm, or a mixture of phlegm and bile, or of blood along with these, or simply a crudity. This crude humour, he remarks, sometimes concretes into *tophi*. The first indication in attempting the cure is to evacuate the offending humour by bleeding or purging; and then repellent and discutient applications are to be used. He has given a great many prescriptions for these. He dissapproves of the warm bath in rheumatic attacks; for, he says, although it appears at first to give relief, it ultimately aggravates the complaint. (Therap. ad Glauc. ii.)

For an able and full explication of the ancient theory of the humours, and the manner in which they give rise to arthritic complaints, we refer the reader to Macrobius (l. c.)

Unfortunately the chapter of Aretæus on the treatment of arthritic complaints has come down to us in a mutilated state. It appears however, that he trusted to hellebore as the great remedy in such cases. His local applications are wool dipped in rose-oil and wine; a sponge soaked in oxycrate, or such like cataplasms. When the disease is hereditary, he says it is generally incurable.

Celsus recommends various refrigerant and anodyne applications to the affected part, such as a sponge soaked in cold water, or in oil and vinegar, or the same soaked in hot water having poppies boiled in it, or a mixture of pitch, wax, and

Comm. alum. The other points of his practice deserve attention, but we shall not enter upon them, as we wish to afford room for a fuller abstract of the doctrines of Alexander.

Gout, according to Psellus, is occasioned by an atony of the nutritive faculty, whereby a thick humour is collected in the system.

Scribonius Largus recommends his favorite remedy for local pains, namely, the application of a living torpedo to the part affected.

Alexander begins with noticing the common opinion that gout is irremediable by the art of medicine, which he affirms not to be the case provided proper attention be paid to the different varieties of it. There are, he says, many causes of the disease; for sometimes a hot blood flows into the cavity of the joint and occasions violent pains; and, in like manner, a defluxion of bile getting between the tendons and ligaments occasions pain by burning and stretching the parts: phlegm likewise, by producing cold and compression, becomes the cause of violent pains; and in like manner the melancholic humour, not only by its coldness and pressure but also by occasioning a sense of heaviness, brings on no ordinary paroxysms. Sometimes a simple quality of the humours, such as heat, cold, dryness, or humidity, will cause a defluxion. The prevalence of a bilious humour is ascertained by the absence of swelling; from the pain being rather a fiery heat than distension; and from the colour being red. The proper remedies in this case are cholagogues, which must not be of a heating nature nor offensive to the stomach; for when the stomach is deranged the nerves sympathise and rheumatism is the consequence. He gives prescriptions for a variety of such compositions containing scammony, agaric, and the like, mixed with pepper, &c. He particularly commends pills of scammony and wormwood. He also recommends cooling and anodyne applications to the affected parts, such as rose-oil with the yelk of an egg, and the like. He enjoins particular attention to the diet, in order to avoid such things as have a tendency to form bile. He recommends moderate exercise rather before than after a meal, but forbids to carry it to excess. He speaks favorably of baths of common water. He concludes this part with minute directions about the local applications: but, as we have already stated his principles, we shall not enter upon the detail of his practice.

When gout is occasioned by phlegm the part is neither hot nor red; is benefited by calefacients and injured by refrigerants. For this variety he recommends particularly a combination of purgative and attenuant medicines, such as the Julian oxymel, which contained white hellebore, agaric, polypody, thyme, cumin, &c. After purging he greatly commends hot and attenuant medicines, in particular the composition from coral, which, among other ingredients, contained birthwort, spikenard, cloves, myrrh, &c. (Birthwort formed one of the principal ingredients of the celebrated Portland powder.) He describes various other antidotes containing bitters, attenuants, and calefacients. His local applications in this case are pounded cabbage, parsley-seed, or fleabane, if the pain is moderate; but otherwise he recommends anodyne cataplasms. Should these, however, rather produce an increase of the pain, he directs us to substitute instead of them discutient and repellent applications, such as decoctions of thyme, mint, &c. with vinegar. He also recommends various cerates with the same intention. Some, he says, have been benefited by stronger applications, such as blisters of cantharides, sinapisms, or the like; but he does not approve of the barbarous practice of burning with the substances called *iscæ* (see Aëtius and Paulus), nor of the above-mentioned rubefacients, but prefers a combination of emollients with discutients. When it is suspected that the gout proceeds from an overflow of blood upon the joint, he recommends us to have recourse to bloodletting, unless otherwise contra-indicated. He proscribes such articles of food as engender much blood, as all sorts of flesh, especially pork; also sweet wines and intemperance of every kind. He says he has known some cured by simply refraining from wine. He then gives directions for the formation of several topical applications which are of a repellent and discutient nature. He speaks very favorably of a sponge soaked in an astringent wine or oxycrate. He then gives ample directions for discussing Tophi or chalk-stones. He lays it down as a general rule that such applications should contain ingredients of a moderately calefacient, discutient, and solvent nature. Among the articles which enter into these compositions we remark litharge, old oil, sanguis draconis, nitre, turpentine, ammoniac, &c. He then states, that as some do not choose to submit patiently to the methodical plan of treatment, but insist upon getting medicines

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COMM. to allay at once the violence of the pains, he, although he did not in general approve of this practice, would now give an account of such remedies. For this purpose, he says, *hermodactylus* is particularly trusted to by some; and he admits that it seldom fails to remove a paroxysm, but affirms that it occasions more frequent returns of it. Some, he adds, have endeavoured to correct its prejudicial effects by adding to it cumin, mastich, or ginger, thinking that its action is narcotic; but this he affirms to be a mistake, for in that case it could not prove cathartic. He admits, however, that these things may prove useful by correcting its bad effects upon the stomach. He then gives various receipts for mixtures containing hermodactylus. As a specimen of them we may mention the first, which consists of hermodactylus, myrrh, pepper, and anise, to which scammony may be added. He recommends it, however, in general, to be given in the form of pills with aloes, scammony, elaterium, and colocynth. But, as mentioned by our author, instead of it he prefers the coronopodium. It is the same, we presume, as the coronopus of Dioscorides, or our buckthorn plantain (*plantago coronopus* L.), although the commentators are not agreed upon this point. (See Matthiolus.) Gesner supposes it a species of *ranunculus*, which he calls *polyanthemon*. Alexander then gives directions for various local applications of an anodyne nature, containing opium, strychnos, ceruse, wax, &c. We regret to say that so admirable a treatise should conclude with some frivolous directions for curing the disease by means of amulets of approved efficacy! However, the advocates of the Mesmerian system of animal magnetism do not hesitate to admit their remedial powers. On the periapta or amulets of the ancients, see Andreas Laurentius (de Marab. Strum. Sanat, 85.)

Our limits will not permit us to do justice to the account of the gout given by Aëtius. Like Aretæus, he maintians that the disease is hereditary. His general views of the nature of the complaint and his treatment are very plausible. He says it is occasioned by weakness of the part and a redundance of humours; that the proper treament therefore consists in evacuating the humours by bleeding and purging, and afterwards in strengthening the part.

Cælius Aurelianus considers arthritis, podagra, and chiragra, as diseases of the same genus. The usual precursory causes

are intemperance, indigestion, debauchery, cold, too much or too little exercise, and external injuries. Some, he adds, are of opinion that it is transmitted from father to son. He gives the symptoms of these complaints with his wonted accuracy. They are seated for the most part, he says, in the nerves, by which term he probably means the tendons and membranes. He remarks the well-known propensity which persons attacked with gout have to attribute the swelling and pain to a sprain or some such accident. If the belly be constipated, he advises us to open it by a simple clyster. He recommends us to abstract blood from the affected part by scarifications, which, he says, will occasion less irritation than cupping or leeching. Sponges squeezed out of hot water, or oil and water, or the decoction of fenugreek, are then to be applied to the part; for he thinks these preferable to a cataplasm, as it is often too heavy. When on the decline, he approves of bathing, spare diet, emollient ointments, and gentle exercise, beginning with gestation, and proceeding to the stronger kinds of it. When they can be borne, he approves of stimulant applications, such as dropaces, heated sand, and even sinapisms. He also speaks favorably of vomiting produced by radishes, hellebore, hip-baths of oil, fomentations with hot salt water, and swimming in hot water or even in cold. He particularly commends the naturally-medicated waters, or spas (as they are now called), such as those of Albula or Cutilia, which, he says, will either cure or mitigate the complaint. He disapproves of burning the joints (the reader will have remarked his general aversion to the cautery), and the indiscriminate application of various narcotics and other such things. He also condemns the free use of emetics, (which, he says, prove injurious to the stomach, and occasion a determination to the head,) of purgatives, acrid clysters, and diuretics. In short, his practice is not unlike that of our Sydenham. His grand rule is to keep upon a spare diet, or even to maintain complete abstinence at the commencement. The formula for his diacentaurco (as Van Swieten remarks) is the same as that for the Portland powder, namely, Aristoloch. rotundæ; gentianæ; sum. chamædryos; centaur. min. p. æquales. Cælius Aurelianus, Galen, Aëtius, Celsus, Aretæus, Oribasius, Scribonius, and Horatianus make no mention of the hermodactylus. Myrepsus and Actuarius make mention of a hermodactylus, but Matthiolus and

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COMM. the commentator on the former think theirs a different plant from the hermodactylus of the other Greek authors. This may be true, and yet the microscopic eye of critics often fancies it can see differences which other people are puzzled to remark. We may mention further regarding the practice of Cælius Aurelianus, that he speaks of soothing the pains of rheumatism, more especially of the hip-joint, by music. On this practice see also Aulus Gellius (iv, 13); Athenæus (Deipnos. xiv, 18); Apollonius (Hist. Marab.); Pliny (H. N. xxviii, 2.)

There is nothing very important in Nonnus, Octavius Horatianus, or Oribasius. We shall now give a brief abstract of the curious treatise on the gout by Demetrius Pepagomenos. The work is dedicated to the Emperor Michael Paleologus, who flourished about the year 1260; and it was published by Morel at Paris, A.D. 1558. The author commences by explaining the nature of that derangement of the animal economy which occasions this complaint. This he does at considerable length, but in much the same terms as Macrobius, to whom the reader has been already referred for an exposition of the humoral pathology. His physiological opinions appear to us to be highly ingenious and philosophical. He comes to the conclusion that gout is occasioned by a collection of humours in the affected joint, these humours being the product of imperfect digestion and of the retention of excrementitious superfluities, which ought to have been evacuated from the system. He says the procatarctic or remote causes of arthritic affections are, long-continued indigestion, repletion with food, drinking too much wine, venery, unusual exercise, indolence, and retention of the natural secretions. Venery, in particular, is said to weaken the tone of the nervous parts. He then proceeds to explain that when crudities are formed in the system, those parts which are strong and vigorous cast them off, which those that are weak cannot effect, and hence collections of such humours take place in them. The prophylaxis of the complaint, he remarks, is easily laid down, but is difficult to follow, namely, to observe great moderation in eating and drinking, and to avoid indigestion. His grand principle of practice is evacuation, which, according to the general rule laid down by Hippocrates, is the proper remedy for repletion. He then shows that vomiting is the mode of evacuation most applicable in this complaint, because

it empties the stomach, which is the fountain whence the humours are derived. His comparison of the stomach to a fountain which irrigates all parts of the system is very appropriate, and is beautifully illustrated by him. He recommends, however, vomiting by simple means; and for this purpose directs the patient to swallow meat imperfectly chewed, radishes, leeks, &c. and, having drunk some honied water, to excite vomiting by tickling the throat with a feather or the finger. He forbids the use of strong emetics. His second method of evacuation is by purging, which he recommends to be done by pills containing aloes, hermodactylus, cinnamon, and scammony. He then proceeds to the cure when an attack has come on. In this case, he recommends us to begin with letting blood, unless the stomach be loaded with impurities, when an emetic must be premised, lest the emptiness of the veins produced by venesection should cause these crude humours to be conveyed over the body. Venesection, he remarks, is particularly applicable at the commencement, when there is simply a plethora of blood, but it is rather prejudicial afterwards when the fluids become altered in quality. In such cases, as he fully explains, purging is the proper remedy, especially when performed by hermodactylus, which, he says, he had found from experience to answer well, from whatever cause the disease had originated. He directs it to be combined with various calefacients and aromatics, such as birthwort, cinnamon, and pellitory. He then makes an ingenious reply to those who affirmed that the disease is not to be cured by purgatives, but that it is sometimes exacerbated by them. In such cases, he properly remarks, it is not the remedy that is in fault but the misapplication of it. Those who cannot bear cathartics by the mouth may have clysters given them; or the preparations from elaterium, juice of sow-bread, or the like, may be applied to the navel. He afterwards gives directions about the local applications, which are nearly the same as those recommended by Alexander. We will have occasion, in the Seventh Book, to discuss the question respecting the nature of the ancient hermodactylus; and we shall merely state here our own decided persuasion that it was a species of colchicum or meadow-saffron. It forms one of the ingredients of the celebrated *Eau médicinale d'Husson*. From the effects produced by the *Eau médicinale* we are inclined to think,

COMM.

COMM. however, that a certain proportion of hellebore must have entered into its composition, as we have never found the colchicum to act so violently as the *eau* is said to do. We have stated above that Cælius Aurelianus makes no mention of the hermodactylus. However, the great modern advocate for Methodism, Prosper Alpinus, speaks favorably of it, and says decidedly that it is the colchicum of the Greeks. It appears not to have fallen into disuse in his time. (De Med. Meth. ix, 4.)

The Arabians follow the Greeks closely in the general principles of treatment, only substituting certain articles introduced into the Materia Medica by themselves. Thus Serapion strongly recommends purging with myrobalans, prunes, and tamarinds. He, Avicenna, and Rhases, join in praising the virtues of the hermodactylus. Their local applications are similar to those of the Greeks. When the pain is violent, Serapion even approves of pouring cold water upon the affected part. Rhases approves of burning the joint in certain cases. Avicenna directs us to cover the part with oil and salt, and thus to apply the cautery gradually. Avicenna speaks more favorably of bathing in thermal waters than any of the other authorities. According to Haly Abbas, arthritic diseases are collections of superfluities of the system in some joint which is labouring under debility. These superfluities are said to be produced by repletion and indigestion. The debility is generally occasioned by immoderate exercise, intemperance, debauchery, or some such cause; and a joint having become weakened, all the impurities of the system are collected into it. He says that young persons and women who menstruate regularly are scarcely liable to the gout. He agrees with the authorities already mentioned in holding it to be hereditary. When the humour in the joints concretes into chalk-stones, he pronounces the case to be incurable. When the disease is produced by a sanguineous plethora, he recommends us to begin with bleeding, and then to use cooling lotions, or even to pour cold water on the joint. When these do not succeed, anodyne applications, containing opium, mandragora, lettuce, saffron, and the like, are to be used. When the pain has abated, any swelling which remains may be discussed by applying to the part a decoction of marjoram, melilot, chamomile, and the like. When the defluxion is connected with bile, he recommends first emetics, and then drastic purgatives,

such as aloes, scammony, colocynth, and hermodactylus. But, if the patient's stomach be weak, he recommends milder laxatives. When the defluxion is of a phlegmatic, that is to say, of a serous nature, he directs us to give the active cathartics already mentioned, especially hermodactylus; and, if it be the summer season, he advises us also to give emetics. He cautions us against using local applications of too stimulant a nature at first, lest they dispel the more fluid parts of the defluxion and leave the grosser behind. This is but a meagre sketch of his interesting account of arthritic diseases. Alsaharavius calls these complaints collections of phlegm, bile, or blood. He holds that they are often hereditary. Like all his countrymen, he approves of hermodactylus, which he gives in the form of pills, with myrobalans, colocynth, turbit, castor, opopanax, &c. When fulness of blood is present, he recommends bleeding. COMM.

The hermodactylus is recommended for the cure of arthritic diseases by the earlier of the modern writers on medicine. See Lanfrancus (ii, 3.)

Among the ancient treatises on gout, we have mentioned the tragi-comic poem entitled 'Tragodopodagra,' usually ascribed to the famous Lucian. It ridicules, with much humour and severity, the many pretended nostrums for this complaint. Among the remedial articles mentioned, we remark hellebore, nitre (*soda*), henbane, poppy, fenugreek, and galls. The ridicule thus bestowed upon the use of specifics for the cure of a complaint so complicated as gout, is no doubt well founded; but we ought not to be deterred, by the ill success of such a practice, from attempting to afford relief upon general principles, as ably laid down by Alexander, Demetrius, and Haly Abbas. We would fain impress upon the physician and his patient, that more than is usually believed might be accomplished in all arthritic diseases, by correcting the disorder of the digestive functions by means of a suitable diet and regimen; and that it is only when the constitution is radically unsound—when the joints are deformed by concretions, and the vital powers have been worn out by a long-continued course of debauchery—that we need adopt the discouraging opinion of Ovid, as expressed in the following line:

"Tollere nodosam nescit medicina podagram."

(Pont. i, el. 4.)

SECT. LXXIX.—ON CHILBLAINS AND AFFECTIONS OF THE FEET AND HEELS.

Chilblains are ulcerous affections forming about the fingers and toes in the season of winter. They should be bathed with tepid sea water, or the decoction of beet, or of lentil, or of bitter vetch, or of the root of kingspear. After this, triturate boiled lentils with wine, and apply in the form of a cataplasm; or, apply figs triturated with oil; or, triturate equal portions of alum and barley-flour in wine, and apply; or use a cataplasm of dried lees of wine or of fresh bulbi triturated with wine; or boil garlic in oil, and having thrown away the garlic, melt a moderate quantity of wax with the oil, and apply; or boil pomegranate-rind in wine, and having triturated, add to the rose-cerate, and use, having previously fomented the part with the decoction of lupines; or apply manna and native sulphur with boiled honey. The juice of henbane rubbed frequently into the part removes the inflammation and pain.

The Marcellian application for chilblains. Having scooped out the heart of a turnip, put into the cavity two ounces of wax, and the same quantity of lentisk oil; and having boiled them in a double vessel along with sea water, brine, or the decoction of lupines, bathe the part with the fluid; and having cooled the cerate which is melted in the turnip, apply it. For ulcerated chilblains: Of frankincense, of fissile alum, of reddle, of rosin, equal parts; dilute with axunge, and use. For ulcers with inflammation, use the application called Hexapharmacon: Of oil, oz. ix; of bull's tallow and gall, of each, lb. ij; of litharge, oz. vj; of colophonian rosin, oz. iv; of honey, oz. vj.

For fissures of the toes and of the whole feet. Anoint with liquid pitch; or, having burnt a river or sea-crab on coals, scrape off the shell, and having triturated it with oil, and made of the consistence of honey, and having wiped the fissures, apply. The inner part of squill boiled in oil and triturated with turpentine also answers well; and a goat's horn burnt and mixed with axunge. One must first clear the callous part, and then use the medicines.

The plaster called the florid for fissures of the heels and soles. Of quicklime, dr. x; of ceruse, dr. xx; of wax, dr. xx or xxx; of fresh axunge, oz. vij; of colophonian rosin, oz. ix; of the juice

of linseed, one cyathus; of sweet oil, oz. xl; nothing is so efficacious for softening the sole.—*Another:* Of goats' seam, of wax, of oil, equal parts; use.—*Another:* Having boiled pomegranate-rind in vinegar, apply for five days; then, having cleaned it away, apply quicklime with oil, or with bath sordes.—*Another:* Having boiled squill in oil, throw away the squill when boiled: having melted some turpentine in this oil, use.

For fretting of the heels from long confinement in bed. Of wax, of oil, of litharge, of honey, equal parts. It answers with every ulcer of the soles, heels, ankles, and inner part of the toes, more especially if the sore be near the nail.

For foul ulcers in the sole, and also for those in the pudendum: To be applied on a pledget. Of lees of oil, one cyathus; of vinegar, one cyathus; having boiled in a copper vessel until of the consistence of honey, and triturated separately with ij dr. of the flakes of copper, and ij dr. of manna, add the ashes of a handful of soft unwashed wool which has been wrapped round a torch and burnt: mix all together, and use, diluting it with wine for wounds, and with must for those of the pudendum and sole. —*Another:* Of lees of oil, of scummed honey, equal parts. This also cleans the gums.

For fretting of the skin by shoes. The lungs of a lamb, of a swine, or of a goat, make a good application. The burnt leather of old shoes does not answer when there is inflammation; but when the inflammation is over it answers well. Or, apply onions with the grease of a fowl; or sprinkle the part with burnt gall; or dissolve acacia in vinegar, and anoint with it.

COMMENTARY. See Hippocrates (Epidem. vii, 38); Celsus (v, 28); Scribonius Largus (86); Oribasius (Morb. Curat. iii, 56); Octavius Horatianus (i, 28); Aëtius (xiv, 73); Actuarius (Meth. Med. vii, 8); Nonnus (224); Avicenna (iii, 22, 2, and iv, 3, 2); Haly Abbas (Pract. iv, 17); Rhases (Divis. 125); Alsaharavius (Pract. xxix, i, 27.) COMM.

These affections of the extremities Celsus recommends, in the first place, to be bathed with hot water in which rapes or vervain have been boiled. If ulceration has not taken place, copper, as hot as possible, is to be applied to the part. If ulcerated, equal proportions of alum and frankincense, with wine, or pomegranate-rind, boiled in water and pounded, are to be applied.

COMM. The following application, recommended by Scribonius, might be useful: Cerussæ, lb. j; ol. myrtei, lb. j; lithargyri, dr. xxiv; ceræ Ponticæ, lb. j. Cerussa et spuma argenti coquuntur cum oleo, donec coeant, postea adjicitur cera.

For pernio, Aëtius gives a long list of applications, several of which are copied by our author. The ordinary ingredients of them are stimulants and astringents. The following may be pointed out as likely to be useful: Aluminis scissi, dr. x; lithargyri, dr. iv; myrrhæ, dr. j; ovorum albumina duo; vino et oleo myrteo; m. Aëtius also gives a variety of prescriptions for fissures and the other complaints of the feet.

The turnip is mentioned by Pliny as an application to chilblains. See also Galen (de Optima Secta, 16.)

Octavius Horatianus lays down very judicious rules for the treatment of these complaints. His applications, however, are much the same as our author's. Thus, for chilblains, he recommends fomentations with salt water, or the decoction of beet, containing also alum; after which the part is to be anointed with melted wax. He also mentions, as proper applications, galls pounded with vinegar; a mixture of wax and melted pitch; a cataplasm of boiled lentils; the grease of geese, with wax and oil, applied in a tepid state; and the like. When ulcerated, he directs us to apply an ointment of litharge and axunge. For fissures he particularly recommends liquid pitch; or litharge mixed with ceruse, alum, and wine. When hairs are troublesome, they are to be cleared away with a fine piece of iron.

For fissures Rhases recommends the fat of a cock with galls. Alsaharavius lays down the rules for treating chilblains in all their stages with great precision. If the parts become red or black, he recommends us to make deep scarifications with a scalpel; after which the foot is to be put into hot water and allowed to bleed freely. His dressings are similar to those of the others. Haly's treatment is like our author's.

SECT. LXXX.—FOR CORNS AND CALLOUS FLESH.

Having first cleaned the corns, apply one of the septics, either verdigris, red arsenic, the powder for fistulæ, or the collyrium for fistulæ instead of gum mixed with ammoniac. A corn is a white

circular body like the head of a nail, forming in all parts of the body, but more especially on the soles of the feet and toes. It may be removed in the course of some time by paring away the prominent part of the corn constantly with a scalpel, or rubbing it down with pumice. The same thing may be done with callus. The ashes of unripe lupines burnt, and mixed with honey, are of use; or misy added to liquid pitch; or gith, with the urine of a boy not come to puberty; or bean-meal boiled with vinegar. And this is an application of approved efficacy for the same purpose: Of cantharides, of copperas, of castor, equal parts; mix with turpentine until it become of the consistence of a plaster, and apply to the corn previously cleaned all around.—*Another:* Of burnt lees of wine, of quicklime, of mistletoe, equal parts, with strained lye, or the urine of a boy not come to puberty.

COMMENTARY. Aëtius delivers the treatment of corns fully, but his remedies, although similar to those of our author, are not of such ready application. COMM.

Celsus says that, by simply paring corns, the part may often be softened. Afterwards rosin mixed with a small quantity of the lapis molaris may be applied.

Avicenna states that, when the disease is not cured, it may end in cancer. Marcellus directs us to pare corns, and apply to them a composition of arsenic and turpentine rosin.

For corns Rhases recommends a composition of red arsenic, quicklime, quicksilver killed, with the ashes of acorns (*impure potash?*) and oil. He also joins Galen in recommending a composition of cantharides and arsenic. For the callus he recommends the juice of figs and of spurge. (Contin. xxxvi.)

SECT. LXXXI.—ON COMPLAINTS ABOUT THE NAILS; AND, FIRST, OF WHITLOW.

Whitlow is an abscess forming about the root of the nail. When, therefore, the whitlow is small and but commencing, galls with honey repress it, and prevent the formation of an abscess; or the trochisk of Musa, or the Here, in water. When a preternatural growth of flesh has taken place, the object is to consume and break it with things that are not of a corrosive nature. The

sordes of the ears and lycium are also good for whitlows. When it suppurates, having opened it and evacuated the fluid, soak a sponge in water, and apply; or apply a cataplasm of lentils pounded with water; or palm-plaster with wine; or green or dried roses macerated in water, and pounded; or dried barley-flour with water. The flour of lupines mixed with honey, or wine and honey is good for whitlow. For ulcerated whitlows: Of verdigris, of litharge, of each, dr. iv; of sarcocolla, dr. iv; sprinkle of it what is sufficient, and apply externally a tent and sponge out of wine. And the flesh must be separated from the nail all around.

On pterygia. Pterygium is fungous flesh covering part of the nail, being caused by whitlow or the like; for which, sprinkle equal parts of arsenic and manna, and apply a tent out of wine and a sponge above it.—*Another:* Of chalcitis, of the flakes of copper, of pomegranate-rind, equal parts; add to a roasted fig and honey, first bathing the part with the decoction of the thickening matters put into ointments; and clean away the part of the pterygium when dried up.

For pterygia of the toes in a putrid state, and for ulcers of the pudendum. Of frankincense, dr. j; of the scales of copper, dr. j; of scraped verdigris called *xyston*, dr. iv; of honey, one cyathus; triturate in the sun until it become yellowish, and use upon a compress, having first bathed with wine.

A composition for quickly drying and curing pterygia. Of burnt sori, dr. ij; of frankincense, dr. ij; of verdigris called *xyston*, dr. j: having triturated with honey, apply to the pterygia. It is useful for the other malignant ulcers, and for lividity, and putridity of these parts.—*Another:* Add the flakes of copper to the flesh of dates, or of figs, and use.—*Another:* Having boiled and triturated pigeons' dung in must with fine polenta, apply warm. And the flakes sprinkled by themselves dry up pterygia. We must always raise and remove with a scalpel the corner of the nail when it increases so as to hurt the pterygium.

For bruised nails. Apply a cataplasm of myrtle and the tender leaves of pomegranate.

For bloody nails. Mix fine flour with pitch, and apply.

To remove diseased nails. Add triturated sulphur to axunge, and apply.

How to remove leprous nails. Of mistletoe of the oak, of red

arsenic, of fenugreek, of each, oz. ij ; of cantharides, of deadly carrot, of each, oz. j ; of vinegar, q. s.—*Another :* Of bee-glue, of Attic wax, of bitumen, of each, dr. ij ; of native sulphur, dr. j. Let only so much oil be added that it may not stain. In using it, warm and apply it to the nails.—*Another :* Of liquid pitch, of wax, of colophonian rosin, of turpentine, of ammoniac perfume, of native sulphur, of aphronitrum, equal parts; evaporate until it does not stain.—*Another, from the works of Ruffus, for leprous nails :* Of cantharides, of native sulphur, of copperas, of each, oz. ss ; of liquid pitch, oz. ij : having made into a plaster, apply to the nail, removing it every third day.

Another for removing leprous nails without ulceration. Of bitumen, of arsenic, of red arsenic, of native sulphur, of each, dr. iv ; add to rosin and use, removing it every seven days.—*Another :* Mixing the flour of bitter vetches with sheep's gall, or sheep's urine, use ; or unslacked lime with oil ; or Chian mastich with opobalsum ; or mixing copperas and native sulphur with mistletoe, spread what is sufficient on a skin, and apply ; or triturate stavesacre with vinegar and use ; or of turpentine rosin, dr. j ; of red arsenic, double the quantity ; apply to the root of the nail, and bind carefully. When the nail falls off, apply the myrtle-cerate, containing a small quantity of the composition from rosin.

COMMENTARY. See most of the authorities referred to in Section LXXIX. COMM.

Aëtius and Oribasius treat whitlow upon the same plan as our author, namely, by using cooling and astringent applications, such as galls, alum, and pomegranate-rind at the commencement ; and after it has burst and fungous flesh has got up, by applying strong caustic and corrosive medicines, such as arsenic, verdigris, quicklime, and the flakes of copper. Neither of these authors, however, say anything about making an early incision of the part affected with whitlow, which must be considered a defect in their method of practice. Octavius Horatianus, however, seems to have had it in view to recommend an early opening, when he says, "Si saniem sanè collegerit, locum pungis." In fact, it is as soon as the part becomes gorged with blood, and before the matter has had time to be properly formed, that an opening should be made.

COMM. Avicenna is exceedingly minute in his directions for treating whitlow. He recommends at first the finger to be put into hot vinegar. Then various astringent and repellent applications are to be used, among other ingredients containing camphor. These are afterwards to be changed for emollient and sedative applications prepared with opium. When matter forms, it is to be let out by a small opening. Haly Abbas recommends at first the seed of fleawort pounded in vinegar or snow, to cool and deaden the sensibility of the part. When these do not answer, he advises suppurative applications; and when the abscess does not open readily, he approves of an incision with the edge of a lancet. When the pain is violent and obstinate, he recommends opium, henbane, and vinegar to be added to the applications. He mentions that Hippocrates recommends an application of galls and vinegar for whitlow. Alsaharavius describes whitlow by the name of *alcahas*. He recommends us to bleed at the commencement, then to use a plaster of vinegar and opium, or a piece of cloth moistened in snow or cold water, and frequently changed, or to put the finger into hot oil. If these means do not succeed, suppuration is to be encouraged; and as soon as matter forms it is to be let out. Avenzoar describes a species of malignant whitlow, of which we have seen some few cases. He says it spreads up the hand, and occasions corruption of it. He recommends free incision, and relates a case in which very bad effects resulted from neglecting this practice. (iii, 2, 37.) This is perhaps the same disease that is described by Alsaharavius (Pract. xxix, 1, 25), and by Albucasis (Chir. i.)

Rhases says that common people put the finger into hot oil. He also recommends hot vinegar and hot water. (Contin. xxxvi.)

Celsus directs us to make an opening around *scabrous nails*, and then to apply a composition consisting of red arsenic, nitre, common arsenic, and liquid pitch. Under the use of this application, the diseased nails fall off and healthy ones come in their place. Haly Abbas and Alsaharavius also recommend applications containing arsenic. Alexander Aphrodisiensis mentions that leuce occurs more commonly on the hands than the feet, and in children rather than in adults. This arises, he says, from the feet being more exercised than the hands, and from children eating more voraciously than adults. (Probl. i, 146.) The compositions recommended in the 'Euporista' of Diosco-

rides for leprous nails are arsenic and water, sandarach, quicklime, and burnt lees of wine with pitch, the juice of thapsia and mustard with vinegar, &c. See also M. M. v, 122. COMM.

For bruised nails, Aëtius strongly commends a mixture of fossil salt with water and oil. Avenzoar speaks of privet (alcanna) with olive-oil.

For bloody nails, Nonnus recommends a mixture of verdigris and axunge.

Avicenna, among other applications resembling those of the Greeks, recommends a plaster of cypress-nuts and savin.

For pterygia, Celsus, among other applications, makes mention of a mixture of arsenic, quicklime, and chalcitis, in equal proportions. If this application fail, he directs us to use the actual cautery. Aëtius and Oribasius recommend the most powerful escharotics, such as verdigris, misy, sori, chalcitis, and arsenic. These applications are mentioned likewise by Rhases. (Contin. xxxvi.)

Pliny says of arsenic, "Tollit et pterygia digitorum," &c. (H. N. xxxiv, 56.)

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